



Navajo Nation Environmental Protection Agency  
Navajo Nation Operating Permit Program

Western Refining Southwest, Inc.  
Wingate Facility

Permit No: NN OP 18-011

2018

# **Western Refining Southwest, Inc. – Wingate Facility**

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# THE NAVAJO NATION

RUSSELL BEGAYE PRESIDENT  
JONATHAN NEZ VICE PRESIDENT

## Navajo Nation Environmental Protection Agency –Air Quality Control/Operating Permit Program

Post Office Box 529, Fort Defiance, AZ 86504 • Bldg. #2837 Route 112  
Telephone (928) 729-4096, Fax (928) 729-4313, Email [airquality@navajo-nsn.gov](mailto:airquality@navajo-nsn.gov)  
[www.navajonationepa.org/airquality.html](http://www.navajonationepa.org/airquality.html)

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### **TITLE V PERMIT TO OPERATE**

<u>PERMIT #:</u>	<u>FACILITY NAME:</u>	<u>LOCATION:</u>	<u>COUNTY:</u>	<u>STATE:</u>
NN OP 18-011	Western Refining Southwest Inc.	Gallup	McKinley	NM
<u>ISSUE DATE:</u>	<u>EXPIRATION DATE:</u>	<u>AFS PLANT ID:</u>	<u>PERMITTING AUTHORITY:</u>	
06/20/2018	06/20/2023	35-031-84232	NNEPA	

**ACTION/STATUS:** PART 71 OPERATING PERMIT

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## Abbreviations and Acronyms

AR	Acid Rain
ARP	Acid Rain Program
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
EIP	Economic Incentives Program
E/U	Emission Unit
gal	gallon
gr	grains
HAP	Hazardous Air Pollutant
hp	horsepower
hr	hour
Id. No.	Identification Number
ISO	International Standards Organization
kg	kilogram
lb	pound
MACT	Maximum Achievable Control Technology
Mg	mega gram
MMBtu	million British Thermal Units
mo	month
MVAC	Motor Vehicle Air Conditioner
NESHAP	National Emission Standards for Hazardous Air Pollutants
NNEPA	Navajo Nation Environmental Protection Agency
NNOPR	Navajo Nation Operating Permit Regulations
NNADCR	Navajo Nation Acid Deposition Control Regulations
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter less than 10 microns in diameter
PM <sub>2.5</sub>	Particulate Matter less than 2.5 microns in diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
psia	pounds per square inch absolute
RMP	Risk Management Plan
SNAP	Significant New Alternatives Program
scf	standard cubic foot
SO <sub>2</sub>	Sulfur Dioxide
TPY	tons per year
TPH	tons per hour
TSP	Total Suspended Particulate
US EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

## I. Source Identification

- Parent Company Name: Western Refining Southwest, Inc.
- Parent Company Address: 92 Giant Crossing Road,  
Gallup NM 87301
- Plant Operator: Western Refining Southwest, Inc.
- Plant Operator Address: 92 Giant Crossing Road,  
Gallup NM 87301
- Plant Name: Western Refining Wingate Facility
- Plant Location: Section 16, Township 15N, Range 17W  
6 miles east of Gallup, New Mexico
- County: McKinley, New Mexico
- US EPA Region: IX
- Reservation: Navajo Nation
- Company Contact: William Bailey Phone: (505) 726-9743
- Responsible Official: Daniel J. Statile Phone: (505) 722-0202
- US EPA Contact: Lisa Beckham Phone: (415) 972-3811
- Tribal Contact: Tennille Denetdeel Phone: (928) 729-4248
- SIC Code: 5171
- AFS Plant Id. No.: 35-031-84232
- Description of Process: The Wingate facility is a crude oil transloading and storage facility. The facility operates as authorized by NSR and Title V permits issued by New Mexico Environment Department. The only emission source associated with facility that is located on the Navajo Nation is a candlestick flare; therefore this permit only applies to that flare.
- Significant Emission Units:

Emission Unit Id. No.	Unit Description	Nominal Capacity	Commenced Construction/ Installation Date	Associated Control Equipment
17	Candlestick flare, Secondary control equipment	63.6 Mscf/hr 25 MMscf/yr (including safety factor)	10/23/72	N/A

## **II. Requirements for Specific Units**

### **II.A. NSPS General Provisions**

The following requirements apply to the operation, maintenance, and testing of the candlestick flare, Unit ID No. 17, in accordance with 40 CFR § 60, Subparts A (“General Provisions”), RRR (Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes), NNN (Standards of Performance for VOC Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations), and KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants):

1. All requests, reports, applications, submittals, and other communications to the Executive Director (NNEPA) pursuant to 40 CFR § 60 shall be submitted in duplicate to the US EPA Region IX office at the following address [40 CFR § 60.4(a)]:  
  
Manager, Air & Tri-Section ENF-2-1  
US EPA Region 9  
Enforcement Division  
75 Hawthorne Street  
San Francisco, CA 94105-3901
2. The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of Western Refining Wingate Facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR §60.7(b)]
3. The availability to the public of information provided to, or otherwise obtained by, the US EPA Administrator under this permit shall be governed by 40 CFR Part 2 (information submitted voluntarily to the Administrator for the purposes of compliance with 40 CFR §§ 60.5 and 60.6 is governed by 40 CFR §§ 2.201 through § 2.213 and not by 40 CFR § 2.301). [40 CFR § 60.9]
4. Compliance with the standards in 40 CFR Part 60 and Conditions II.B and II.C shall be determined in accordance with the performance tests established by 40 CFR § 60.8, unless otherwise specified in the applicable standard. [40 CFR § 60.11(a)]
5. At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate Western Refining Wingate Facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the

Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR §60.11(d)]

6. For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in 40 CFR § 60, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [40 CFR § 60.11(g)]
7. The permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere. [40 CFR § 60.12]
8. With respect to applicable NSPS provisions under 40 CFR § 60, the permittee shall comply with the “General notification and reporting requirements” found in 40 CFR § 60.19. [40 CFR § 60.19]
9. The permittee shall provide to NNEPA and US EPA Region IX written notification or, if acceptable to NNEPA, US EPA Region IX and the permittee, electronic notification of any reconstruction of Western Refining Wingate Facility, or any physical or operational change to Western Refining Wingate Facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under this permit or in 40 CFR § 60.14(e), in accordance with 40 CFR § 60.7. [40 CFR § 60.7(a)]

## **II.B. NSPS General Control Device Requirements**

The Permittee shall comply with the following requirements for the candlestick flare (EU 17) in accordance with 40 CFR § 60.18 and Condition II.C of this permit

- (a) (1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (d), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours
- (2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (d).
- (3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (a)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (a)(4) of this section, or adhering to the requirements in paragraph (a)(3)(i) of this section.
  - (i)(A) Flares shall be used that have a diameter of 3 inches or greater, are

nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity,  $V_{\max}$ , as determined by the following equation:

$$V_{\max} = (X_{H_2} - K_1) * K_2$$

Where:

$V_{\max}$  = Maximum permitted velocity, m/sec.

$K_1$  = Constant, 6.0 volume-percent hydrogen.

$K_2$  = Constant, 3.9(m/sec)/volume-percent hydrogen.

$X_{H_2}$  = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77. (Incorporated by reference as specified in §60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (d)(4) of this section.

- (ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (d)(3) of this section.
- (4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (d)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (a)(4) (ii) and (iii) of this section.
- (ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (d)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
- (iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (d)(4), less than the velocity,  $V_{\max}$ , as determined by the method specified in paragraph (d)(5), and less than 122 m/sec (400 ft/sec) are allowed.
- (5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity,  $V_{\max}$ , as determined by the method specified in paragraph (d)(6).
- (6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.
- (b) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in



conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

- (c) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.
- (d)(1) Method 22 of appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.
- (2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
- (3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of off gas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \frac{\text{Constant}}{1.740 \times 10^{-7}} \left( \frac{1}{\text{ppm}} \right) \left( \frac{\text{g mole}}{\text{scm}} \right) \left( \frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for  $\left( \frac{\text{g mole}}{\text{scm}} \right)$  is 20°C;

$C_i$  = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

$H_i$  = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

- (4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.
- (5) The maximum permitted velocity,  $V_{\max}$ , for flares complying with paragraph (a)(4)(iii) shall be determined by the following equation.

$$\text{Log}_{10} (V_{\max}) = (H_T + 28.8) / 31.7$$

$V_{\max}$  = Maximum permitted velocity, m/sec

28.8 = Constant

31.7 = Constant

$H_T$  = The net heating value as determined in paragraph (d)(3).

- (6) The maximum permitted velocity,  $V_{\max}$ , for air-assisted flares shall be determined by the following equation.

$$V_{\max} = 8.706 + 0.7084 (H_T)$$

$V_{\max}$  = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

$H_T$  = The net heating value as determined in paragraph (d)(3).

## **II.C. NSPS Requirements (Unit ID No. 17 only)**

### **A. 40 CFR Part 60, Subpart NNN**

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart NNN, included as Appendix A of this permit, and 40 CFR §60.18 as specified at Condition II.B of the permit, when using the candlestick flare (EU 17) to comply with Subpart NNN for the vapor recovery unit (Unit 11), Mega train ("B") Depropanizer Distillation Unit and the Butamer De isobutanizer reactors regulated under New Mexico Environment Department Operating Permit *et seq.*:

- (1) 40 CFR §60.660 (Applicability and designation of affected facility)
- (2) 40 CFR §60.661 (Definitions)
- (3) 40 CFR §60.662(b) (Standards)
- (4) 40 CFR §60.663(b) Monitoring of emissions and operations)
- (5) 40 CFR §60.664(a),(d) and (e) (Test methods and procedures)
- (6) 40 CFR §60.665(b)(3),(f), and (l)(4) (Reporting and recordkeeping requirements)
- (7) 40 CFR §60.666 (Reconstruction)
- (8) 40 CFR §60.667 (Chemicals affected by subpart NNN)

### **B. 40 CFR Part 60, Subpart RRR**

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart RRR, included as Appendix B of this permit, and 40 CFR §60.18 as specified at Condition II.B of the permit, when using the candlestick flare (EU 17) to comply with Subpart RRR for the vapor recovery unit (Unit 11), isobutanizer reactors regulated under New Mexico Environment Department Operating Permit *et seq.*:

- (1) 40 CFR §60.700 (Applicability and designation of affected facility)
- (2) 40 CFR §60.701 (Definitions)
- (3) 40 CFR §60.702(b) (Standards)
- (4) 40 CFR §60.703(b) (Monitoring of emissions and operations)
- (5) 40 CFR §60.704(a),(c) and (d) (Test methods and procedures)

- (6) 40 CFR §60.705(b)(3),(d),(e),(l)(3),(l)(7), and (s) (Reporting and recordkeeping requirements)
- (7) 40 CFR §60.706 (Reconstruction)
- (8) 40 CFR §60.707 (Chemicals affected by subpart RRR)

C. 40 CFR Part 60, Subpart KKK

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart KKK, included as Appendix C of this permit, and 40 CFR §60.18 as specified at Condition II.B of the permit, when using the candlestick flare (EU 17) to comply with Subpart KKK for the vapor recovery unit (Unit 11), the truck rack loading system (Unit 16), and the butamer unit (Unit 18) regulated under New Mexico Environment Department Operating Permit *et seq.*:

- (1) 40 CFR §60.633(g) (Exceptions)

**II.D. Monitoring and Testing Requirements** [40 CFR § 71.6(a)(3)(i)(B) & (C); 71.6(a)(3)(ii); 71.6 (c)(1)]

- A. At least once per calendar year, the Permittee shall conduct a performance test utilizing Method 22 (Smoke Emissions From Flares) in order to determine compliance with Condition II.B(a)(1) when the equipment associated with Conditions II.C.A, II.C.B or II.C.C are venting gas to the flare. The observer must be knowledgeable with respect to the general procedures for determining the presence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. Smoke emissions are defined as a pollutant generated by combustion in a flare and occurring immediately downstream of the flame. Smoke occurring within the flame, but not downstream of the flame, is not considered a smoke emission. The observation period shall be 2 hours.
- B. For each Method 22 observation, the observer shall record and maintain records of the following:
  - (1) the date and time of the observation and the name of the observer;
  - (2) the unit ID number;
  - (3) whether or not the emission unit(s) were operating;
  - (4) statement of whether visible emissions were detected, and if so, whether they were observed continuously or intermittently; and
  - (5) the results of the Method 22 observation.

- C. The Permittee shall retain records of such compliance testing and present such records upon request.
- D. In order to demonstrate compliance with Condition II.B.(a)(2), the Permittee shall monitor the continuous presence of a flame using the method outlined in Condition II.B(d)(2).

**II.E. Compliance Schedule** [40 CFR §§ 71.5(c)(8)(iii), 71.6(c)(3)]

- 1. For applicable requirements with which Western Refining Wingate Facility is in compliance, Western Refining Wingate Facility will continue to comply with such requirements.
- 2. For applicable requirements that will become effective during the permit term, Western Refining Wingate Facility shall meet such requirements on a timely basis.
- 3. For purposes of this permit, “applicable requirement” means all of the following as they apply to emissions units in a Part 71 source (including requirements that have been promulgated or approved by US EPA through rulemaking at the time of issuance but have future compliance dates) [40 CFR § 71.2] :
  - a. Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by US EPA through a rulemaking under Title I of the Clean Air Act (“CAA”) that implements the relevant requirements of the CAA, including any revisions to that plan promulgated in 40 CFR Part 52;
  - b. Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under Title I, including Parts C or D, of the CAA;
  - c. Any standard or other requirement under Section 111 of the CAA, including Section 111(d);
  - d. Any standard or other requirement under section 112 of the CAA, including any requirement concerning accident prevention under Section 112(r)(7) of the CAA;
  - e. Any standard or other requirement of the acid rain program under Title IV of the CAA or 40 CFR Parts 72 through 78;
  - f. Any requirements established pursuant to Section 114(a)(3) or 504(b) of the CAA;
  - g. Any standard or other requirement under Section 126(a)(1) and (c) of the

CAA;

- h. Any standard or other requirement governing solid waste incineration under Section 129 of the CAA;
- i. Any standard or other requirement for consumer and commercial products under Section 183(e) of the CAA;
- j. Any standard or other requirement for tank vessels under Section 183(f) of the CAA;
- k. Any standard or other requirement of the program to control air pollution from outer continental shelf sources under Section 328 of the CAA;
- l. Any standard or other requirement of the regulations promulgated at 40 CFR Part 82 to protect stratospheric ozone under Title VI of the CAA, unless the EPA Administrator has determined that such requirements need not be contained in a Title V permit; and
- m. Any national ambient air quality standard or increment or visibility requirement under Part C of Title I of the CAA, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the CAA.

**II.F. Operational Flexibility** [40 CFR § 71.6(a)(13)(i)] [NNOPR § 404(A)] [The NNOPR provision is enforceable by NNEPA only.]

- 1. The permittee is allowed to make a limited class of changes under CAA §502(b)(10) within Western Refining Wingate Facility that contravene the specific terms of this permit, without applying for a permit revision, provided the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions) and are not Title I modifications. This class of changes does not include:
  - a. Changes that would violate any applicable requirements; or
  - b. Changes that would contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements. [40 CFR § 71.2] [NNOPR § 102(54)]
- 2. The permittee is required to notify NNEPA and US EPA Region IX at least seven days in advance of any change made under this provision. The notice must describe the change, when the change will occur, any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy of this permit.

3. Any permit shield provided in this permit does not apply to changes made under this provision.

### **III. Facility-Wide or Generic Permit Requirements**

Conditions in this section of the permit apply to all emissions units located at the facility.

#### **III.A. Recordkeeping Requirements** [40 CFR §§ 40 CFR 60.7(f), 71.6(a)(3)(ii)] [40 CFR § 60.7(f)] [NNOPR § 302(F)] [The NNOPR provision is enforceable by NNEPA only.]

In addition to the unit-specific recordkeeping requirements derived from the applicable requirements for each individual unit and contained in Section II, the permittee shall comply with the following generally applicable recordkeeping requirements:

1. The permittee shall keep records of required monitoring information that include the following:
  - a. The date, place, and time of sampling or measurements;
  - b. The date(s) analyses were performed;
  - c. The company or entity that performed the analyses;
  - d. The analytical techniques or methods used;
  - e. The results of such analyses; and
  - f. The operating conditions as existing at the time of sampling or measurement.
2. The permittee shall retain records of all required monitoring data and support information for at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [40 CFR § 60.735(a)]
3. The permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR § 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports and records.

**III.B. Reporting Requirements** [40 CFR § 71.6(a)(3)(iii)][NNOPR § 302(G)] [The NNOPR provision is enforceable by NNEPA only.]

The permittee shall comply with the following generally applicable reporting requirements.

1. The permittee shall submit to NNEPA and US EPA Region IX reports of any monitoring required under 40 CFR §§ 71.6(a)(3)(i)(A), (B), or (C) each six-month reporting period from January 1 to June 30 and from July 1 to December 31. All reports shall be submitted to NNEPA and US EPA Region IX and shall be postmarked by the 30th day following the end of the reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with Section IV.E of this permit.
  - a. A monitoring report under this section must include the following:
    - i. The company name and address.
    - ii. The beginning and ending dates of the reporting period.
    - iii. The emissions unit or activity being monitored.
    - iv. The emissions limitation or standard, including operational requirements and limitations (such as parameter ranges), specified in the permit for which compliance is being monitored.
    - v. All instances of deviations from permit requirements, including those attributable to upset conditions as defined in the permit and including exceedances as defined under 40 CFR § 64, and the date on which each deviation occurred.
    - vi. If the permit requires continuous monitoring of an emissions limit or parameter range, the report must include the total operating time of the emissions unit during the reporting period, the total duration of excess emissions or parameter exceedances during the reporting period, and the total downtime of the continuous monitoring system during the reporting period.
    - vii. If the permit requires periodic monitoring, visual observations, work practice checks, or similar monitoring, the report shall include the total time when such monitoring was not performed during the reporting period and at the source's discretion either the total duration of deviations indicated by such monitoring or the actual records of deviations.

- viii. All other monitoring results, data, or analyses required to be reported by the applicable requirement.
    - ix. The name, title, and signature of the responsible official who is certifying to the truth, accuracy, and completeness of the report.
  - b. Any report required by an applicable requirement that provides the same information described in Conditions III.B.1.a.i through ix above shall satisfy the requirement under Condition III.B.1.
  - c. “Deviation” means any situation in which an emissions unit fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or recordkeeping established in accordance with 40 CFR §§ 71.6(a)(3)(i) and (a)(3)(ii). For a situation lasting more than 24 hours, each 24-hour period may be considered a separate deviation. Included in the meaning of deviation are any of the following:
    - i. A situation when emissions exceed an emission limitation or standard;
    - ii. A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;
    - iii. A situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit;
    - iv. A situation in which an exceedance, as defined in the compliance assurance plan at 40 CFR Part 64, occurs.
2. The permittee shall promptly report to NNEPA and US EPA Region IX deviations from permit requirements or start-up, shut-down, or malfunction plan requirements, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the underlying applicable requirement contains a definition of “prompt” or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement does not define prompt or provide a timeframe for reporting deviations, reports of deviations shall be submitted based on the following schedule:
- a. For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an



hour in excess of permit requirements, the report must be made within 24 hours of the occurrence or within 24 hours of the occurrence.

- b. For emissions of any regulated pollutant, excluding a hazardous air pollutant or a toxic air pollutant that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.
  - c. For all other deviations from permit requirements, the report shall be submitted with the semi-annual monitoring report required in Condition III.B.1 of this permit.
3. If any of the conditions in Condition III.B.2.a or b of this permit are met, the source must notify the NNEPA and US EPA Region IX by telephone, facsimile, or electronic mail sent to [airquality@navajo-nsn.gov](mailto:airquality@navajo-nsn.gov) and [r9.aeo@epa.gov](mailto:r9.aeo@epa.gov), based on the timetable listed. A written notice, certified consistent with Condition III.B.4 of this permit must be submitted within ten working days of the occurrence. All deviations reported under this section must also be identified in the six-month report required under Condition III.B.1.
4. Any application form, report, or compliance certification required to be submitted by this permit shall contain certification by a responsible official of truth, accuracy, and completeness. All certifications shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

### **III.C. Stratospheric Ozone and Climate Protection [40 CFR § 82]**

1. The permittee shall comply with the standards for labeling products using ozone depleting substances pursuant to 40 CFR § 82, Subpart E:
  - a. All containers in which a Class I or Class II substance is stored or transported, all products containing a Class I substance, and all products directly manufactured with a Class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR § 82.106.
  - b. The placement of the required warning statement must comply with the requirements of 40 CFR § 82.108.
  - c. The form of the label bearing the required warning statement must comply with the requirements of 40 CFR § 82.110.
  - d. No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR § 82.112.
2. The permittee shall comply with the standards for recycling and emissions

reduction pursuant to 40 CFR § 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs), MCAV-like appliances and/or small appliances:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR § 82.156.
  - b. Equipment used during maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment under 40 CFR § 82.158.
  - c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR § 82.161.
  - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to 40 CFR § 82.166. (“MVAC-like appliance” is defined in 40 CFR § 82.152.).
  - e. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements under 40 CFR § 82.156.
  - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of when the refrigerant was purchased and added to such appliances, pursuant to 40 CFR § 82.166(k).
3. If the permittee manufactures, transforms, destroys, imports, or exports a Class I or Class II substance, the permittee is subject to all the requirements as specified in 40 CFR § 82, Subpart A.
  4. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR § 82, Subpart B.

The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B, does not include the air-tight sealed refrigeration systems used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

5. The permittee shall be allowed to switch from any ozone-depleting substance to any acceptable substitute that is listed pursuant to 40 CFR Part 82, Subpart G.

### **III.D. Asbestos from Demolition and Renovation** [40 CFR § 61, Subpart M]

The permittee shall comply with the requirements of 40 CFR §§ 61.140 through 61.157 of the National Emission Standard for Asbestos for all demolition and renovation projects.

### **III.E. Chemical Accident Prevention** [Clean Air Act Sections 112(r)(1), 112(r)(3), 112(r)(7) & 40 CFR Part 68]

1. The following activities are considered essential and necessary to satisfy the general duty requirements of Section 112(r)(1) of the Act:
  - a. Identify hazards which may result from accidental releases using appropriate hazard assessment techniques.
  - b. Design, maintain, and operate a safe facility.
  - c. Minimize the consequences of accidental releases if they occur.
2. This facility is subject to 40 CFR Part 68 and shall certify annual compliance with all requirements of 40 CFR Part 68, including compliance with the risk management plan (RMP) submitted to USEPA Region IX. [40 CFR § 68.215]

## **IV. Title V Administrative Requirements**

### **IV.A. Fee Payment** [NNOPR Subpart VI][The NNOPR provision is enforceable by NNEPA only.]

1. The permittee shall pay an annual permit fee in accordance with the procedures outlined below. [NNOPR § 603(A) and (B)]
  - a. The permittee shall pay the annual permit fee by September 1 of each year.
  - b. The fee payment shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of Navajo Nation Environmental Protection Agency.
  - c. The permittee shall send the fee payment and a completed fee filing form to:

Navajo Nation Air Quality Control Program  
Operating Permit Program  
P.O. Box 529  
Fort Defiance, AZ 86504

2. The permittee shall submit a fee calculation worksheet form with the annual permit fee by September 1 of each year. Calculations of actual or estimated emissions and calculation of the fees owed shall be computed on the fee calculation worksheets provided by the US EPA. Fee payment of the full amount must accompany each fee calculation worksheet. [NNOPR § 603(A)]
3. The fee calculation worksheet shall be certified as to truth, accuracy, and completeness by a responsible official consistent with 40 CFR § 71.5(d).
4. Basis for calculating the annual fee:

The annual emissions fee shall be calculated by multiplying the total tons of actual emissions of all fee pollutants emitted from the source by the applicable emissions fee (in dollars/ton) in effect at the time of calculation. Emissions of any regulated air pollutant that are already included in the fee calculation under a category of regulated pollutant, such as a federally listed hazardous air pollutant that is already accounted for as a VOC or as PM10, shall be counted only once in determining the source's actual emissions. [NNOPR § 602(A) and (B)(1)]

  - a. "Actual emissions" means the amount of emissions calculated using the actual rate of emissions in TPY of any fee pollutant emitted from a Part 71 source over the preceding calendar year and each emissions unit's actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. Actual emissions shall not include emissions of any one fee pollutant in excess of 4,000 TPY, or any emissions that come from insignificant activities. [NNOPR §§ 602(B)(1), 102(5)]
  - b. Actual emissions shall be computed using methods required by the permit for determining compliance, such as monitoring or source testing data.
  - c. If actual emissions cannot be determined using the compliance methods in the permit, the permittee shall use other federally recognized procedures.
  - d. The term "fee pollutant" is defined in NNOPR § 102(24).
  - e. The term "regulated air pollutant" is defined in NNOPR § 102(50), except that for purposes of this permit the term does not include any pollutant that is regulated solely pursuant to 4 N.N.C. § 1121 nor does it include any hazardous air pollutant designated by the Director pursuant to 4 N.N.C. § 1126(B).
  - f. The permittee should note that the applicable fee is revised each year to account for inflation, and it is available from NNEPA starting on March 1 of each year.

- g. The total annual fee due shall be the greater of the applicable minimum fee and the sum of subtotal annual fees for all fee pollutants emitted from the source. [NNOPR § 602(B)(2)]
- 5. The permittee shall retain, in accordance with the provisions of 40 CFR § 71.6(a)(3)(ii), all fee calculation worksheets and other emissions-related data used to determine fee payment for five years following submittal of fee payment. Emission-related data include emissions-related forms provided by NNEPA and used by the permittee for fee calculation purposes, emissions-related spreadsheets, records of emissions monitoring data and related support information.
- 6. Failure of the permittee to pay fees in a timely manner shall subject the permittee to the assessment of penalties and interest in accordance with NNOPR § 603(C).
- 7. When notified by NNEPA of underpayment of fees, the permittee shall remit full payment within 30 days of receipt of notification.
- 8. A permittee who thinks an NNEPA assessed fee is in error and wishes to challenge such fee, shall provide a written explanation of the alleged error to NNEPA along with full payment of the NNEPA assessed fee. NNEPA shall, within 90 days of receipt of the correspondence, review the data to determine whether the assessed fee was in error. If an error was made, the overpayment shall be credited to the account of the permittee.

**IV.B. Blanket Compliance Statement** [CAA §§ 113(a) and (e)(1), 40 CFR §§ 52.12, 52.33, 60.11(g), 71.6(a)(6)]

- 1. The permittee must comply with all terms and conditions of this Part 71 permit. Any permit noncompliance, including, but not limited to, violation of any applicable requirement; any permit term or condition; any fee or filing requirement; any duty to allow or carry out inspection, entry, or monitoring activities; or any regulation or order issued by the permitting authority pursuant to this part constitutes a violation of the CAA and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR §§ 71.6(a)(6)]
- 2. Determinations of deviations, continuous or intermittent compliance status, or violations of this permit, are not limited to the applicable testing or monitoring methods required by the underlying regulations or this permit; other credible evidence (including any evidence admissible under the Federal Rules of Evidence) must be considered in such determinations. [CAA §§ 113(a) and (e)(1), 40 CFR §§ 51.212, 52.12, 52.33, 60.11(g)]

**IV.C. Compliance Certifications** [40 CFR § 71.6(c)(5)][NNOPR § 302(I)(3)][The NNOPR provision is enforceable by NNEPA only.]

1. The permittee shall submit to NNEPA and US EPA Region IX a semi-annual certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, postmarked by January 30 and covering the previous calendar year. The compliance certification shall be certified as to truth, accuracy, and completeness by the permit-designated responsible official consistent with Section IV.E of this permit and 40 CFR § 71.5(d). [40 CFR § 71.6(c)(5)]
2. The permittee shall submit to NNEPA a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, postmarked by July 30 of each year and covering the previous six months. The compliance certification shall be certified as to truth, accuracy, and completeness by the permit-designated responsible official consistent with Section IV.E. of this permit. This condition is enforceable by NNEPA only. [NNOPR § 302(I)].
3. The certification shall include the following:
  - a. Identification of each permit term or condition that is the basis of the certification.
  - b. Identification of the method(s) or other means used for determining the compliance status of each term and condition during the certification period.
  - c. The compliance status of each term and condition of the permit for the period covered by the certification based on the method or means designated above. The certification shall identify each deviation and take it into account in the compliance certification.
  - d. A statement whether compliance with each permit term was continuous or intermittent.
  - e. If necessary, the owner or operator shall also identify any other material information that must be included in the certification to comply with CAA § 113(c)(2), which prohibits knowingly making a false certification or omitting material information.

**IV.D. Duty to Provide and Supplement Information** [40 CFR §§ 71.6 (a)(6)(v), 71.5(b)][NNOPR § 301(E)][The NNOPR provision is enforceable by NNEPA only.]

The permittee shall furnish to NNEPA, within a reasonable time, any information that NNEPA may request in writing to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with

the permit. Upon request, the permittee shall also furnish to NNEPA copies of records that are required to be kept pursuant to the terms of the permit, including information claimed to be confidential. (Confidential information may be provided to US EPA Region IX only, pursuant to 40 CFR § 71.6(a)(6)(v), at the permittee's discretion.) Information claimed to be confidential should be accompanied by a claim of confidentiality according to the provisions of 40 CFR Part 2, Subpart B. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit to NNEPA such supplementary facts or corrected information. The permittee shall also provide additional information to NNEPA as necessary to address any requirements that become applicable to the facility after this permit is issued.

**IV.E. Submissions** [40 CFR §§ 71.5(d), 71.6][NNOPR § 103][The NNOPR provision is enforceable by NNEPA only.]

Any document required to be submitted with this permit shall be certified by a responsible official as to truth, accuracy, and completeness. Such certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. All documents required to be submitted, including reports, test data, monitoring data, notifications, compliance certifications, fee calculation worksheets, and applications for renewals and permit modifications shall be submitted to NNEPA and US EPA Region IX, as applicable, at the respective addresses below:

Navajo Nation Air Quality Control Program  
Operating Permit Program  
P.O. Box 529  
Fort Defiance, AZ 86504

For Permit Renewal and Modification Applications:

Permits Office Chief, Air-3  
US EPA Region 9  
Air Division  
75 Hawthorne Street  
San Francisco, CA 94105-3901

For All Other Submissions:

Manager, Air & Tri-Section ENF-2-1  
US EPA Region 9  
Enforcement Division  
75 Hawthorne Street  
San Francisco, CA 94105-3901

**IV.F. Severability Clause** [40 CFR § 71.6 (a)(5)][NNOPR § 302(A)(5)][The NNOPR provision is enforceable by NNEPA only.]

The provisions of this permit are severable. In the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

**IV.G. Permit Actions** [40 CFR § 71.6 (a)(6)(iii)][NNOPR § 406][The NNOPR provision is enforceable by NNEPA only.]

This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

**IV.H. Administrative Permit Amendments** [40 CFR § 71.7(d)][NNOPR § 405(C)][The NNOPR provision is enforceable by NNEPA only.]

The permittee may request the use of administrative permit amendment procedures for a permit revision that:

1. Corrects typographical errors.
2. Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source.
3. Requires more frequent monitoring or reporting by the permittee.
4. Allows for a change in ownership or operational control of a source where NNEPA determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to NNEPA.
5. Incorporates into the permit the requirements from preconstruction review permits authorized under a US EPA-approved program, provided that such a program meets procedural requirements substantially equivalent to the requirements of 40 CFR §§ 71.7 71.8 and 71.10 that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in 40 CFR § 71.6.
6. Incorporates any other type of change that NNEPA has determined to be similar to those listed above in Conditions IV.H.1 through 5.



**IV.I. Minor Permit Modifications** [40 CFR § 71.7(e)(1)][NNOPR § 405(D)][The NNOPR provision is enforceable by NNEPA only.]

1. The permittee may request the use of minor permit modification procedures only for those modifications that:
  - a. Do not violate any applicable requirement.
  - b. Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit.
  - c. Do not require or change a case-by-case determination of an emissions limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis.
  - d. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    - i. A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of CAA Title I; and
    - ii. An alternative emissions limit approved pursuant to regulations promulgated under CAA § 112(i)(5).
  - e. Are not modifications under any provision of CAA Title I.
  - f. Are not required to be processed as a significant modification.
2. Notwithstanding the list of changes eligible for minor permit modification procedures in Condition IV.I.1, minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in an applicable implementation plan or in applicable requirements promulgated by US EPA.
3. An application requesting the use of minor permit modification procedures shall meet the requirements of 40 CFR § 71.5(c) and shall include the following:
  - a. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
  - b. The source's suggested draft permit;

- c. Certification by a responsible official, consistent with 40 CFR § 71.5(d), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
  - d. Completed forms for the permitting authority to use to notify affected States and the Administrator as required under 40 CFR § 71.8.
4. The permittee may make the change proposed in its minor permit modification application immediately after it files such application. After the permittee makes the change allowed by the preceding sentence, and until NNEPA takes any of the actions authorized by 40 CFR §§ 71.7(e)(1)(iv)(a) through (c), the permittee must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time period, the permittee need not comply with the existing permit terms and conditions it seeks to modify. If the permittee fails to comply with its proposed permit terms and conditions during this time period, however, the existing permit terms and conditions it seeks to modify may be enforced against it.
  5. The permit shield under 40 CFR § 71.6(f) may not extend to minor permit modifications.

**IV.J. Significant Permit Modifications** [40 CFR §§ 71.5(a)(2), 71.7(e)(3)][NNOPR §§ 301(C), 405(E)] [The NNOPR provision is enforceable by NNEPA only.]

1. The permittee must request the use of significant permit modification procedures for those modifications that:
  - a. Do not qualify as minor permit modifications or as administrative amendments.
  - b. Are significant changes in existing monitoring permit terms or conditions.
  - c. Are relaxations of reporting or recordkeeping permit terms or conditions.
2. Nothing herein shall be construed to preclude the permittee from making changes consistent with Part 71 that would render existing permit compliance terms and conditions irrelevant.
3. The permittee must meet all requirements of Part 71 for applications for significant permit modifications. Specifically, for the application to be determined complete, the permittee must supply all information that is required by 40 CFR §71.5(c) for permit issuance and renewal, but only that information that is related to the proposed change.

**IV.K. Reopening for Cause** [40 CFR § 71.7(f)][NNOPR § 406][This NNOPR provision is enforceable by NNEPA only.]

1. US EPA shall reopen and revise the permit prior to expiration under any of the following circumstances:
  - a. Additional requirements under the CAA become applicable to a major Part 71 source with a remaining permit term of 3 or more years.
  - b. NNEPA or US EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
  - c. NNEPA or US EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and shall be made as expeditiously as practicable.
3. Reopening for cause by NNEPA shall not be initiated before notice of such intent is provided to the permittee by NNEPA at least 30 days in advance of the date that the permit is to be reopened, except that NNEPA may provide a shorter time period in the case of an emergency.
4. Reopening for cause by US EPA shall follow the procedures set forth in 40 CFR§71.7(g).

**IV.L. Property Rights** [40 CFR § 71.6(a)(6)(iv)][NNOPR § 302(B)(5)][The NNOPR provision is enforceable by NNEPA only.]

This permit does not convey any property rights of any sort, or any exclusive privilege.

**IV.M. Inspection and Entry** [40 CFR § 71.6(c)(2)][NNOPR § 302(I)(2)][The NNOPR provision is enforceable by NNEPA only.]

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized representatives from NNEPA and US EPA to perform the following:

1. Enter upon the permittee's premises where a Part 71 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under

the conditions of the permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
4. As authorized by the federal CAA, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

**IV.N. Emergency Provisions** [40 CFR § 71.6(g)][NNOPR § 305][The NNOPR provision is enforceable by NNEPA only.]

1. In addition to any emergency or upset provision contained in any applicable requirement, the permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
  - b. The permitted facility was at the time being properly operated;
  - c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and
  - d. The permittee submitted notice of the emergency to US EPA within 2 working days of the time when emissions limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of Condition III.C.2 of this permit. In any enforcement proceeding, the permittee has the burden of proof to establish the occurrence of an emergency.
2. An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emissions limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

**IV.O. Transfer of Ownership or Operation** [40 CFR § 71.7(d)(1)(iv)][NNOPR §405(C)] [The NNOPR provision is enforceable by NNEPA only.]

A change in ownership or operational control of this facility may be treated as an administrative permit amendment if no other change in this permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to NNEPA.

**IV.P. Off-Permit Changes** [40 CFR § 71.6(a)(12)][NNOPR § 404(B)][The NNOPR provision is enforceable by NNEPA only.]

The permittee is allowed to make certain changes without a permit revision, provided that the following requirements are met:

1. Each change is not addressed or prohibited by this permit;
2. Each change must comply with all applicable requirements and may not violate any existing permit term or condition;
3. Changes under this provision may not include changes or activities subject to any requirement under Title IV or that are modifications under any provision of CAA Title I;
4. The permittee must provide contemporaneous written notice to NNEPA and US EPA Region IX of each change, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11). The written notice must describe each change, the date of the change, any change in emissions, pollutants emitted and any applicable requirements that would apply as a result of the change; and
5. The permittee must keep a record describing all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes.

**IV.Q. Permit Expiration and Renewal** [40 CFR §§ 71.5(a)(1)(iii), 71.6(a)(11), 71.7(b), 71.7(c)(1)(i) and (ii)][NNOPR §§ 301(B)(2) and 401(F)][The NNOPR provision is enforceable by NNEPA only.]

1. This permit shall expire upon the earlier occurrence of the following events:
  - a. Up to 12 years elapse from the date of issuance to a solid waste incineration unit combusting municipal waste subject to standards under CAA § 129; or
  - b. For sources other than those identified in Condition IV.Q.1.a above, five

years elapse from the date of issuance; or

- c. The source is issued a Part 70 permit by a US EPA-approved permitting authority.
2. Expiration of this permit terminates the permittee's right to operate unless a timely and complete permit renewal application has been submitted on or before a date six months, but not more than 18 months, prior to the date of expiration of this permit.
3. If the permittee submits a timely and complete permit application for renewal consistent with 40 CFR § 71.5(a)(2), but the permitting authority has failed to issue or deny the renewal permit, the permit shall not expire until the renewal permit has been issued or denied.
4. The permittee's failure to have a current Part 71 permit is not a violation of part 71 until NNEPA takes final action on the permit renewal application. This protection shall cease to apply if, subsequent to the completeness determination under 40 CFR § 71.7(a)(4), the permittee fails to submit any additional information identified as being needed to process the application by the deadline specified in writing by NNEPA.
5. Renewal of this permit is subject to the same procedural requirements that apply to initial permit issuance, including those for public participation, affected State, and tribal review.
6. The application for renewal shall include the current permit number, description of permit revisions and off-permit changes that occurred during the permit term, any applicable requirements that were promulgated and not incorporated into the permit during the permit term, and other information required by the application.

#### **IV.R. Malfunction**

The following administrative requirements apply to the candlestick flare:

NNEPA and US EPA Region 9 shall be notified by telephone within 48 hours following any failure of the candlestick flare to operate in a normal manner if such failure results in an increase in emissions. In addition, NNEPA and US EPA Region 9 shall be notified in writing within fifteen (15) days of any such failure. This notification shall include a description of the malfunction or abnormal operation, the date of the initial failure, the period of time of the failure, the cause of the failure, the estimated resultant emissions and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.





# THE NAVAJO NATION

RUSSELL BEGAYE PRESIDENT  
JONATHAN NEZ VICE PRESIDENT

## Navajo Nation Environmental Protection Agency –Air Quality Control/Operating Permit Program

Post Office Box 529, Fort Defiance, AZ 86504 • Bldg. #2837 Route 112  
Telephone (928) 729-4096, Fax (928) 729-4313, Email [airquality@navajo-nsn.gov](mailto:airquality@navajo-nsn.gov)  
[www.navajonationepa.org/airquality.html](http://www.navajonationepa.org/airquality.html)

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### **Detailed Information**

#### **Permitting Authority: Navajo Nation Environmental Protection Agency**

**County:** McKinley      **State:** New Mexico      **AFS Plant ID:** 35-031-84232

**Facility:** Western Refining Southwest, Inc. - Wingate Facility

**Document Type:** STATEMENT OF BASIS

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Part 71 Federal Operating Permit  
Statement of Basis

WESTERN REFINING SOUTHWEST, Inc.

WINGATE FACILITY

Permit No. NN OP 18-011

#### **1. Facility Information**

##### **a. Permittee**

Western Refining Southwest, Inc.  
92 Giant Crossing Road,  
Gallup NM 87301

##### **b. Facility Location**

Section 16, Township 15N, Range 17W  
6 miles east of Gallup, New Mexico.

##### **c. Contact Information**

Facility Contact:	William Bailey, Environmental Supervisor Phone: (505) 726-9743
Responsible Official:	Daniel J. Statile, VP and Refinery Manager Phone: (505) 722-0202

##### **d. Description of Operations, Products:**

The Wingate facility is a crude oil transloading and storage facility. The facility operates as authorized by NSR and Title V permits issued by New Mexico Environment Department. The only emission source associated with facility that is



located on the Navajo Nation is a candlestick flare; therefore this permit only applies to that flare.

A brief outline of the Wingate Facility current operations is as follows.

1. The facility receives iC4 (isobutane) railcars via BNSF railroad.
  - a. Pressurize railcar using Natural Gas purchased from Kinder Morgan
  - b. Unload iC4 from railcar to the tanks, tank is vented to flare while offloading.
2. iC4 is then pumped to the Gallup Refinery via pipeline.

**e. Permitting and/or Construction History**

Western Refining Wingate Facility which was previously owned by ConocoPhillips Company was initially constructed in 1952. The New Mexico Environment Department issued a construction permit and a number of subsequent revisions for all of the facility including the candlestick flare, which was constructed in 1972 on the reservation of the Navajo Nation. In 2000, the facility submitted an application identifying the flare (Unit 17) as a major source for VOC based upon previous calculations and data. On December 22, 2001, USEPA Region IX issued a Part 71 permit (NN-OP-00-08) to the facility that covered the candlestick flare unit. NMED also issued revised NSR and Title V permits not including the candlestick flare.

NNEPA received a Part 71 renewal application on May 23, 2005. On February 9, 2009, NNEPA received a revised Part 71 renewal application. As part of the revised Part 71 renewal application, ConocoPhillips revised the PTE of VOC from the flare to reflect maximum historic flare operations, inclusive of safety factors, instead of an unrealistic assumption of continuous full capacity flaring and resultant product loss. While the resultant PTE of VOC at 34.1 tons per year is greater than that determined in original Part 71 Permit (i.e., 19.1 tons per year), this increase does not reflect a modification to the flare but is only a correction to the method of computing regulated pollutant emission rate from the flare. Emission calculation submitted by ConocoPhillips in the revised Part 71 renewal application support the revision to the method of calculating PTE of VOC from the flare.

On September 15, 2015 the ownership and operational control of Wingate Facility changed from ConocoPhillips Company to Western Refining Southwest, Inc. Western Refining Southwest, Inc. assumed all obligation and responsibilities, including the Title V permit issued by the NNEPA for the facility flare on October 1, 2014. On October 9, 2015 NSR Permit 1313-M6 was issued by NMED to change the primary function of the facility from a natural gas processing plant to a crude oil transloading facility. With that permit revision, equipment and emissions associated with the new operation were added to Wingate's NSR permit. None of the new equipment associated with the change in operations are located on the Navajo Nation. Since none of the new equipment were installed nor operated at

the facility, this Title V renewal application reflect the units currently located at the facility and current operations.

**f. Permitted Emission Units and Control Equipment**

Table 1 lists the permitted emission-generating units and activities at the facility.

Table 1. List of Emission Units

<b>Emission Unit ID</b>	<b>Unit Description</b>	<b>Maximum Capacity</b>	<b>Commenced Construction/ Installation Date</b>	<b>Associated Control Equipment</b>
17	Candlestick process flare	63.6 Mscf/hr 25 MMscf/yr	1972	N/A

**g. Insignificant Emissions**

This facility also emits pollutants at insignificant levels, as described in 40 CFR § 71.5(c)(11)(ii), which are defined as emission units with PTE less than 1 tpy of each criteria pollutant, or PTE less than 0.5 tpy or the de minimis level established under the federal Clean Air Act (CAA) § 112(g), whichever is less, for a single HAP:

1. Fugitive VOC emissions from connections, flanges, open-ended lines, valves, and other components with the flare.

**h. Emissions Calculations**

See Attachment A of this document for detailed emissions calculations.

**i. Potential to Emit**

Potential to emit (PTE) means the maximum capacity of any stationary source to emit any CAA-regulated air pollutant under the source's physical and operational design. See 40 C.F.R. § 52.21(b)(4). Any physical or operational limitation on the maximum capacity of Wingate Facility to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of fuel combusted, stored, or processed, must be treated as part of its design if the limitation is enforceable by US EPA. PTE is meant to be a worst-case emissions calculation and is used in many cases, though not all, to determine the applicability of federal requirements. Actual emissions may be much lower than PTE. The potentials to emit are presented in Tables 2 below.

Table 2. Potential to Emit of Criteria Air Pollutants

Emission Unit ID(s)	40 CFR Part 71 Regulated Air Pollutants in Tons Per Year (TPY)						
	PM	PM <sub>10</sub>	NO <sub>x</sub>	SO <sub>x</sub>	CO	VOC	Combined HAPs
Unit 17 Candlestick flare	0.031	0.031	2.7	0.016	12.3	38.3	< 10 single < 25 total
NMED Op. Permit No.: P117-R2	5.5	5.5	107.2	0.7	75.4	177.2	< 10 single < 25 total
PTE of the Entire Source (NMED +NNEPA)	5.53	5.53	109.9	0.71	87.7	215.5	< 10 single < 25 total
Title V (Part 71) Major Source Thresholds	NA	100	100	100	100	100	10 for a single HAP / 25 for total HAP

## 2. Tribe Information

### a. General

The Navajo Nation has the largest land base of any tribe in the United States, covering 27,425 square miles in three states: Arizona, Utah, and New Mexico. The Navajo Nation is currently home to more than 300,000 people. Industries on the reservation include oil and natural gas processing, coal mining, sand mining, power production and tourism.

### b. Local Air Quality and Attainment Status

All areas of the Navajo Nation are currently designated as attainment or unclassifiable for all pollutants for which a National Ambient Air Quality Standard (NAAQS) has been established.

## 3. Inapplicable Requirements

### a. NSPS for Industrial-Commercial-Institutional Steam Generating Units (40 CFR §§ 60.40b-60.49b, Subpart Db)

This subpart applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 Megawatts (MW) (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). There are no steam generating units located in conjunction with the flare; therefore, this subpart does not apply

- b. **NSPS for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978 (40 CFR §§ 60.110 - 60.113; 40 CFR Part 60, Subpart K)**

These regulations apply to storage vessels for petroleum liquids with storage capacities greater than 40,000 gallons and do not apply to storage vessels for petroleum or condensate stored, processed, and/or treated at a drilling and production facility prior to custody transfer. There is no storage tank with a capacity greater than 40,000 gallons located on-site in conjunction with the flare; therefore, this subpart does not apply.

- c. **NSPS for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and Prior to July 23, 1984 (40 CFR §§ 60.110a - 60.115a; 40 CFR Part 60, Subpart Ka)**

These regulations apply to storage vessels for petroleum liquids with storage capacities greater than 40,000 gallons and do not apply to petroleum storage vessels with capacities of less than 420,000 gallons used for petroleum or condensate stored, processed, or treated prior to custody transfer. There is no storage tank with a capacity greater than 40,000 gallons located on-site in conjunction with the flare; therefore, this subpart does not apply.

- d. **NSPS for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (40 CFR §§ 60.110b – 60.117b; 40 CFR Part 60, Subpart Kb)**

These regulations apply to storage vessels with capacities greater than or equal to 75 cubic meters (471 bbl) that is used to store Volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. There is no storage vessel with a capacity greater than equal to 75 m<sup>3</sup> located on site in conjunction with the flare; therefore, this subpart does not apply.

- e. **NSPS for Stationary Gas Turbine for which Construction, Reconstruction, or Modification Commenced after October 3, 1977 (40 CFR §§ 60.330 – 60.335; 40 CFR Part 60, Subpart GG)**

This regulation establishes standards of performances for stationary gas turbines. The Wingate facility does not have any stationary gas turbine; therefore, this subpart does not apply.

- f. **NSPS for SO<sub>2</sub> Emissions from Onshore Natural Gas Processing for which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and On or Before August 23, 2011(40 CFR §§ 60.640 – 60.648; 40 CFR Part 60, Subpart LLL)**

These regulations apply to sweetening units and sulfur recovery units at onshore natural gas processing facilities. The flare is not a natural gas treatment plant as defined in this subpart; therefore, this subpart does not apply.

**g. NSPS for Crude Oil and Natural Gas Production, Transmission and Distribution (40 CFR §§ 60.5360 – 60.5430; 40 CFR Part 60, Subpart OOOO)**

These regulations establish emission standards and compliance schedules to control volatile organic compounds (VOC) and sulfur dioxide (SO<sub>2</sub>) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. Subpart OOOO was amended and published in the Federal Register on June 3, 2016 with an effective date of August 2, 2016. The amendments are applicable to affected facilities that commence construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015. The flare is not a control device for a NSPS OOOO affected unit; therefore, this subpart does not apply.

**h. NSPS for Crude Oil and Natural Gas Facilities (40 CFR §§ 60.5360a – 60.5499a; 40 CFR Part 60, Subpart OOOOa)**

These regulations establish emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG) from affected facilities that commence construction, modification or reconstruction after September 18, 2015. The flare is not a control device for a NSPS OOOOa affected unit; therefore, this subpart does not apply.

**i. NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR §§ 60.4230 – 60.4248; 40 CFR Part 60, Subpart JJJJ)**

These regulations establish emission standards and compliance requirements to control emissions from spark ignition (SI) internal combustion engines (ICE) that commence construction, modification or reconstruction after June 12, 2006, where the SI ICE are manufactured on or after specified dates. There are no engines located in conjunction with the flare; therefore, this subpart does not apply.

**j. NESHAP National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT) 40 CFR §§ 63**

In accordance with 40 CFR §§ 63.10(b) (3), the flare is not a major source for HAPs as defined in 40 CFR 63, therefore no MACT standards apply.

**k. Compliance Assurance Monitoring (CAM) Program (40 CFR Part 64)**

These regulations apply to pollutant-specific emission units at major sources that are required to obtain 40 CFR part 70 or 71 permits where a unit is subject to an emission limitation or standard for the applicable regulated air pollutant, uses a

control device to achieve compliance with such limitation or standard, and has potential pre-control device emissions of the applicable regulated air pollutant that equal or exceed the amount required for the source to be classified as a major source. The flare is not used to control emissions below an applicable major source threshold; therefore, the requirements of 40 CFR Part 64 are not applicable.

**l. Acid Rain Program (40 CFR Parts 72 – 78)**

These regulations establish general provisions and operating permit program requirements for affected sources containing affected units. The flare is not an affected source, as specified in 40 CFR § 72.6(a). Therefore, the emission units at the Wingate facility are not subject to requirements of the Acid Rain Program.

**m. Protection of Stratospheric Ozone (40 CFR Part 82)**

There are no operations involving CFC's conducted at the flare; therefore, this regulation does not apply.

**n. Prevention of Significant Deterioration (PSD)**

The Western Refining Wingate facility was originally constructed by ConocoPhillips in 1952, and the candlestick flare, located in Navajo Nation jurisdiction, was constructed in 1972. Modifications to this source are outlined in the Statement of Basis for the Title V renewal permit issued by NMED (Permit No.: P117-R2). This source is an existing PSD major source. Since there have been no major source modifications to the flare, however, the PSD requirement do not apply and therefore are not included in this permit.

**4. Applicable Requirements**

**a. NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and On or Before August 23, 2011 (40 CFR §§ 60.630 – 60.636; 40 CFR Part 60, Subpart KKK)**

Emission units, identified as Unit 11 (Vapor Recovery Unit), Unit 16 (Truck Rack System) and Unit 18 (butamer unit), located in NMED jurisdiction and regulated under operating permit P117-R2, are subject to 40 CFR 60, Subpart KKK. Emissions from the Truck Rack Systems and the Butamer Unit are directed to the vapor recovery unit, where hydrocarbons are recovered for re-introduction into the processing system. Unrecoverable hydrocarbons are directed to the large boiler (Unit 19), in normal operation. When there is a failure or overload of the VRU, some or all emissions are directed to the candle stick flare. Under 40 CFR § 60.633(g), flares used to comply with this subpart shall comply with the requirements of 40 CFR § 60.18. Therefore, the requirements of 40 CFR § 60.18 have been incorporated into the permit.

**b. NSPS for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation operation (40 CFR §§ 60.660 – 60.667; 40 CFR Part 60, Subpart NNN)**

The Mega train Depropanizer Distillation Unit, located in NMED Jurisdiction and regulated under operating Permit P117-R2, was constructed or modified after December 30, 1983 and Butamer unit, located in NMED Jurisdiction and regulated under operating Permit P117-R2, was constructed or modified after June 29, 1990. These units are affected facilities under 40 CFR 60, Subpart NNN. The Permittee shall comply with the following provisions of 40 CFR part 60, subpart NNN and 40 CFR § 60.18 as specified at condition II.B of the Permit, when using the candlestick flare (Unit 17) to comply with Subpart NNN for the Mega train Depropanizer Distillation Unit and the Butamer Unit regulated under New Mexico Environmental Department Operating Permit P117-R2.

**c. NSPS for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes (40 CFR §§ 60.700 – 60.707; 40 CFR Part 60, Subpart RRR)**

The isobutanizer reactors, located in NMED Jurisdiction and regulated under Operating Permit P117-R2, were constructed or modified after June 29, 1990 and are affected facilities subject to 40 CFR 60, Subpart RRR. The Permittee shall comply with the following provisions of 40 CFR 60, Subpart RRR and 40 CFR § 60.18 as specified at condition II.B of the Permit, when using the candlestick flare (Unit 17) to comply with Subpart RRR for the isobutanizer reactors regulated under New Mexico Environmental Department Operating Permit P117-R2.

**d. NSPS (New Source Performance Standard) – General Provisions (40 CFR Part 60, Subpart A)**

This source is subject to the General Provisions of 40 CFR 60, Subpart A. As such, the Requirements of 40 CFR § 60.18, general control device and work practice requirements for the flare, have been incorporated into the permit. The Permittee shall continue to comply with these applicable requirements.

**e. Chemical Accident Prevention Program**

This Source is subject to the Chemical Accident Prevention program regulated under section 112(r) of the Clean Air Act and 40 CFR Part 68. A risk management plan (RMP) has been submitted to USEPA Region VI and applies to the facility as a whole; a separate RMP for the candlestick flare is not required.

**f. Asbestos NESHAP (40 CFR Part 61, Subpart M)**

The Western Refining Wingate Facility is subject to the national emission standard for asbestos, 40 CFR Part 61, Subpart M, for all renovation and demolition projects, as specified in the permit document.

**g. Federal Implementation Plan (40 CFR Parts 49 and 51)**

EPA promulgated a Federal Implementation Plan for preconstruction review of major sources in nonattainment areas and of minor sources and minor modifications at major sources in both attainment and nonattainment areas, which became effective on August 30, 2011. These regulations, codified in 40 CFR Parts 49 and 51, establish pre-construction review requirements for sources that will be incorporated in Part 71 federal operating permits. Western Refining Wingate facility is not currently constructing a new emission unit or modifying the existing emission unit. In the future, if the facility constructs new emission units or modifies existing emission units, it may be required to obtain a permit from US EPA prior to construction.

**5. Endangered Species Act**

Pursuant to Section 7 of the Endangered Species Act (ESA), 16 U.S.C. § 1536, and its implementing regulations at 50 CFR Part 402, US EPA is required to ensure that any action authorized, funded, or carried out by US EPA is not likely to jeopardize the continued existence of any federally listed endangered species or threatened species or result in the destruction or adverse modification of the designated critical habitat of any such species. NNEPA is issuing this federal Part 71 permit pursuant to a delegation from US EPA. However, this permit does not authorize the construction of new emission units or emission increases from existing units, nor does it otherwise authorize any other physical modifications to the facility or its operations. Therefore, NNEPA and US EPA have concluded that the issuance of this permit will have no effect on listed species or their critical habitat.

**6. Use of Credible Evidence**

Determinations of deviations from, continuous or intermittent compliance with, or violations of the permit are not limited to the testing or monitoring methods required by the underlying regulations or this permit. Other credible evidence (including any evidence admissible under the Federal Rules of Evidence) must be considered by Western Refining, NNEPA and US EPA in such determinations.



## **7. NNEPA Authority**

Authority to administer a Part 71 Permit Program was delegated to NNEPA by US EPA in part on October 13, 2004 and in whole on March 21, 2006. In delegating to NNEPA the authority to administer the Part 71 operating permit program, US EPA determined that NNEPA had adequate independent authority to administer the program, as required by 40 CFR § 71.10(a). Specifically, US EPA found NNEPA had adequate permit processing requirements and adequate permit enforcement-related investigatory authorities. Delegation Agreement between US EPA Region IX and NNEPA, §§ IV, V, VI.1, IX.2. Moreover, before waiving its collection of fees under 40 CFR § 71.9(c)(2)(ii), US EPA determined that NNEPA could collect sufficient revenue under its own authorities to fund a delegated Part 71 Program. Delegation Agreement at 1 and § II.2.

The Title V Permit therefore refers both to federal and to tribal provisions. When federal and tribal provisions are cited in parallel, the tribal provisions are identical to the federal provisions and compliance with the federal provision will constitute compliance with the tribal counterpart. Parallel tribal citations do not create any new requirements or impact the federal enforceability of the cited Part 71 requirements. All federal terms and conditions of the permit will be enforceable both by NNEPA and US EPA, as well as by citizens, under the federal Clean Air Act.

The provisions of Navajo law referenced in the permit will only be enforceable by NNEPA and will be enforced by NNEPA under the Navajo Nation Operating Permit Regulations and the Navajo Nation Air Pollution Prevention and Control Act, 4 N.N.C. §§ 1101-1162. Proposed Section IV.A (Fee Payment) refers only to the NNOPR as its source of authority because US EPA waived its collection of fees, as discussed above. This provision will be tribally enforceable only.

## **8. Public Participation**

### **a. Public Notice**

As described in 40 C.F.R. § 71.11(a)(5) and NNOPR § 403(A), all draft operating permits shall be publicly noticed and made available for public comment. The public notice requirements for permit actions and the public comment period are described in 40 C.F.R. § 71.11(d) and NNOPR § 403.

Public notice of this proposed permit action was provided to Western Refining, US EPA Region IX, and the affected state, local and tribal governments via a mailed copy of the notice. A copy of the notice was also provided to all persons who submitted a written request to be included on the mailing list.

Public notice was published in a daily or weekly newspaper of general circulation in the area affected by this source.

**b. Response to Comments**

NNEPA did not receive any comments on the draft Part 71 permit.

# Attachment A

## PTE Calculation

**Emission Calculation**  
**Potential to Emit From Unit# 17 Flare**  
**Western Refining Southwest, Inc. - Wingate Facility**  
**Section 16, Township 15N, Range 17W, 6 miles East of Gallup, NM.**

Unit No(s): 17  
Description: Flare

\*This calculation assumes only isobutane/butane unloading is taking place at the facility.

Emission Unit ID No.	Maximum Capacity	
17	63.6 Mscf/hr	Hourly Maximum
	25 MMscf/yr	Yearly Maximum

**Flow Rate:**

	25.0 MMscf/yr	Annual Flowrate
	0.0029 MMscf/hr	
	9745.3 lb/hr	hourly max
	63627.0 scf/hr	hourly max
	0.064 MMscf/hr	hourly max
	3001.0 MMBtu/MMScf	Heat Value
	8.56 MMBtu/hr	scfh * Maximum heating value / 1000
Pilot	500.0 scf/hr	flare pilot
	0.0120 MMscf/d	scf/hr * 24 (hr/day) / 1*10 <sup>6</sup> SCF/MMscf
	1000.0 BTU/scf	Nominal, sweet natural gas
	0.500 MMBtu/hr	
Flared Gas + Pilot	9.1 MMBtu/hr	Annual Limit
Flared Gas	190.9 MMBtu/hr	Hourly Limit

**Emission Calculations**

Pilot Emissions	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S	VOC	PM <sub>10</sub>	Units
	0.068	0.31				40.00	lb/MMBtu
					0.0%		ug/L
					23.70		mol %
							ft <sup>3</sup> /lb
				3.6E-04			lb H <sub>2</sub> S/Mscf
				1.8E-04			H <sub>2</sub> S rate * fuel usage
			7.1E-03				Purchased sweet natural gas fuel, 5 gr S/100scf
			3.6E-03				lb S/Mscf
	0.034	0.155			0.00		lb SO <sub>2</sub> /hr*
			0.0036	3.6E-06	-	-	lb/hr
	0.15	0.68	0.016	1.6E-05	0.00	-	lb/MMBtu * MMBtu/hr
							98% combustion H <sub>2</sub> S; 100% conversion to SO <sub>2</sub>
							8760 hrs/yr
Vent Gas Flaring	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S	VOC	PM <sub>10</sub>	
	0.068	0.31				40.00	lb/MMBtu
							ug/L
			-	0.00%	100.0%		mol %
			-	23.65	6.53		ft <sup>3</sup> /lb
			-	0.00	9,745.3		Specific volume
							vol. Gas * mole fraction / specific volume
				98%	98%	0.16	ug/L * 1 g/10 <sup>6</sup> ug * 1 lb/453.6 g * 1 L/0.0353 scf * scf/hr
							Estimated control efficiency for H <sub>2</sub> S and VOC
			100%				Estimated H <sub>2</sub> S conversion to SO <sub>2</sub> (1-1 molar ratio)
	13.0	59.2	0.00	0.000	194.9	0.16	Based on pilot plus flared gas
	2.55	11.63	0.00	0.000	38.3	0.031	
							tpy
Total Pilot + Flaring	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S	VOC	PM <sub>10</sub>	
	13.0	59.3	3.6E-03	3.6E-06	194.9	0.16	lb/hr
	2.7	12.3	1.6E-02	1.6E-05	38.3	0.031	tpy

Unit ID No.	Potential to Emit (tons/year)					
	NO <sub>x</sub>	CO	SO <sub>2</sub>	H <sub>2</sub> S	VOC	PM <sub>10</sub>
Unit 17	2.7	12.3	1.6E-02	1.6E-05	38.3	0.031

**Emission Calculation**  
**Gas Analysis**  
**Western Refining Southwest, Inc. - Wingate Facility**  
**Section 16, Township 15N, Range 17W, 6 miles East of Gallup, NM.**

Component	MW	Wet vol/mol%	Dry vol/mol%	MW * dry vol %	LHV Btu/scf	Btu/scf * dry vol %	Mass Fraction (dry)	Spec. Volume ft <sup>3</sup> /lb	Spec. Volume VOC ft <sup>3</sup> /lb
Water	18.02	0.000%						21.06	
Nitrogen	28.01	0.000%	0.00%	0.000	0	0.00	0.00%	13.547	
CO <sub>2</sub>	44.01	0.000%	0.00%	0.000	0	0.00	0.00%	8.623	
H <sub>2</sub> S	34.08	0.000%	0.00%	0.000	586.71	0.00	0.00%	11.136	
Methane	16.04	0.000%	0.00%	0.000	909.1	0.00	0.00%	23.65	
Ethane	30.07	0.000%	0.00%	0.000	1617.8	0.00	0.00%	12.62	
Propane	44.10	0.000%	0.00%	0.000	2315.9	0.00	0.00%	8.606	0.000
Isobutane	58.12	100.000%	100.00%	58.123	3001	3001.00	100.00%	6.529	6.529
n-Butane	58.12	0.000%	0.00%	0.000	3010.5	0.00	0.00%	6.529	0.000
Neopentane	72.15	0.000%	0.00%	0.000	3682.3	0.00	0.00%	5.26	0.000
Isopentane	72.15	0.000%	0.00%	0.000	3697.9	0.00	0.00%	5.26	0.000
n-Pentane	72.15	0.000%	0.00%	0.000	3706.8	0.00	0.00%	5.26	0.000
2,2-Dimethyl	86.15	0.000%	0.00%	0.000	4393.8	0.00	0.00%	4.404	0.000
2,3-Dimethyl	86.15	0.000%	0.00%	0.000	4393.8	0.00	0.00%	4.404	0.000
2-Methylpeni	86.15	0.000%	0.00%	0.000	5092.3	0.00	0.00%	3.787	0.000
3-Methylpeni	86.15	0.000%	0.00%	0.000	5098.4	0.00	0.00%	3.787	0.000
n-Hexane	86.15	0.000%	0.00%	0.000	4403.9	0.00	0.00%	4.404	0.000
Heptanes	100.20	0.000%	0.00%	0.000	5100	0.00	0.00%	3.787	0.000
Octanes	114.20	0.000%	0.00%	0.000	5796	0.00	0.00%	3.322	0.000
Nonanes	128.30	0.000%	0.00%	0.000	6493	0.00	0.00%	2.959	0.000
Decanes plus	142.00	0.000%	0.00%	0.000	7189	0.00	0.00%	2.667	0.000
Benzene	78.11	0.000%	0.00%	0.000	3591	0.00	0.00%	4.858	0.000
Toluene	92.14	0.000%	0.00%	0.000	4273.5	0.00	0.00%	4.119	0.000
Ethylbenzene	106.17	0.000%	0.00%	0.000	4970.6	0.00	0.00%	3.574	0.000
M&P Xylene	106.17	0.000%	0.00%	0.000	4957	0.00	0.00%	3.574	0.000
O-Xylene	106.17	0.000%	0.00%	0.000	4958	0.00	0.00%	3.574	0.000
2,2,4-Trimeth	114.20	0.000%	0.00%	0.000	5779	0.00	0.00%	3.322	0.000
Total		100.0%	1.00	58.12		3001.00	100%		6.529
Dry total		100.0%		(mixture mol. wt)		(mixture heating value)			
NMHC		100.00%							
NMEHC (VOC)		100.00%					100.00%		
HAP		0.00%					0.0%		

Attachment B

Public Notice



# Public Notice

## PROPOSED PART 71 PERMIT

Western Refining Southwest Inc.

Wingate Facility

LOCATED NEAR Gallup, New Mexico.



Date of FIRST PUBLICATION April 11, 2018.

The Navajo Nation Environmental Protection Agency (NNEPA), Air Quality Control Program (AQCP), Operating Permit Program (OPP) is accepting written comments on the proposed Part 71 permit for Western Refining Southwest, Inc. – Wingate facility. The Facility is a crude oil transloading and storage facility. The candlestick flare is the only emission source associated with the facility that is located on the Navajo Nation; therefore this permit only applies to that flare. The overall facility operates as authorized by the New Source Review (NSR) and Title V permits issued by New Mexico Environment Department (NMED).

The Wingate facility is located 6 miles east of Gallup, New Mexico. The facility was initially constructed by ConocoPhillips Company in 1952, but was sold to Western Refining Southwest, Inc. in 2015. On October 9, 2015 NSR Permit 1313-M6 was issued by NMED to change the primary function of the facility from a natural gas processing plant to a crude oil transloading facility. With that permit revision, equipment and emissions associated with the new operations were added to the NSR permit for the facility. Since none of the new equipment were installed nor operated at the facility, this Title V renewal application reflects the units currently located at the facility and current operations. The emission unit covered under this Title V permit is the candlestick flare identified as Unit # 17. This notice of draft Part 71 permit fulfills the public notice procedures to which the draft permits are subject.

Written comments, written requests for a public hearing, written requests for notification of the final decision, and inquiries or requests for additional information regarding these permitting actions may be submitted to Tennille Denetdeel at AQCP, OPP, P.O. Box 529, Fort Defiance, AZ 86504. **Written comments and/or written requests must be received by 5:00 pm, May 11, 2018.** Written comments will be considered prior to final permit decisions.

If NNEPA finds a significant degree of public interest, a public hearing will be held. NNEPA will send notification of the final permit decision to the applicant and to each person who has submitted written comments or a written request for notification of the final decision.

The applications, proposed air permits, and statements of basis are available for review at NNEPA, AQCP, OPP, Fort Defiance, AZ 86504. Viewing hours are from 8:00 a.m. to 4:30 p.m., Monday through Friday (except holidays). Copies of the draft permit and the statement of basis can also be obtained from NNEPA's website at:

<http://navajonationepa.org/main/images/Western%20Refining%20Wingate%20Facility%20Draft%20Permit.pdf>

Inquiries or requests for additional information regarding these permit actions should be directed to Tennille Denetdeel at the above address or by phone at (928) 729-4248.

Persons wishing to be included on the AQCP permit public notice mailing list should contact Angie Frank in writing at AQCP, OPP, at the above address, by phone at (928) 729-4096, or by email at [angiefrank@navajo-nsn.gov](mailto:angiefrank@navajo-nsn.gov). E-files of permit public notices and permits can be requested from NNEPA (NAQCP) by email request at [tbbegay@navajo-nsn.gov](mailto:tbbegay@navajo-nsn.gov).

**40 CFR Part 60, Subpart NNN—Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations**

**§60.660 Applicability and designation of affected facility.**

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in §60.667 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c).

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after December 30, 1983:

(1) Each distillation unit not discharging its vent stream into a recovery system.

(2) Each combination of a distillation unit and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more distillation units and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any distillation unit operating as part of a process unit which produces coal tar or beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(2) Any distillation unit that is subject to the provisions of subpart DDD is not an affected facility.

(3) Any distillation unit that is designed and operated as a batch operation is not an affected facility.

(4) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§60.662; 60.664 (e), (f), and (g); and 60.665 (h) and (l).

(5) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than one gigagram per year is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in paragraphs (j), (l)(6), and (n) of §60.665.

(6) Each affected facility operated with a vent stream flow rate less than 0.008 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in §60.664(g) and paragraphs (i), (l)(5), and (o) of §60.665.

(d) *Alternative means of compliance—*(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§60.662 through 60.665 and 60.668. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(4) and (6) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65,



subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

[NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.]

[55 FR 26942, June 29, 2000, as amended at 65 FR 78279, Dec. 14, 2000; 79 FR 11251, Feb. 27, 2014]

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#### **§60.661 Definitions.**

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

*Batch distillation operation* means a noncontinuous distillation operation in which a discrete quantity or batch of liquid feed is charged into a distillation unit and distilled at one time. After the initial charging of the liquid feed, no additional liquid is added during the distillation operation.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam.

*By compound* means by individual stream components, not carbon equivalents.

*Continuous recorder* means a data recording device recording an instantaneous data value at least once every 15 minutes.

*Distillation operation* means an operation separating one or more feed stream(s) into two or more exit stream(s), each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor-phase as they approach equilibrium within the distillation unit.

*Distillation unit* means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system.

*Flame zone* means the portion of the combustion chamber in a boiler occupied by the flame envelope.

*Flow indicator* means a device which indicates whether gas flow is present in a vent stream.

*Halogenated vent stream* means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

*Incinerator* means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

*Process heater* means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

*Process unit* means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in §60.667. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

*Product* means any compound or chemical listed in §60.667 that is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

*Recovery device* means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

*Recovery system* means an individual recovery device or series of such devices applied to the same vent stream.

*Total organic compounds (TOC)* means those compounds measured according to the procedures in §60.664(b)(4). For the purposes of measuring molar composition as required in §60.664(d)(2)(i); hourly emissions rate as required in §60.664(d)(5) and §60.664(e); and TOC concentration as required in §60.665(b)(4) and §60.665(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for State Implementation Plans (SIP) revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

*TRE index value* means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual distillation vent stream, based on vent stream flow rate, emission rate of TOC net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under §60.664(e).

*Vent stream* means any gas stream discharged directly from a distillation facility to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

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## **§60.662 Standards.**


Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §§60.8 and 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever

is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of §60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

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#### **§60.663 Monitoring of emissions and operations.**

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under §60.662(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with §60.662(b) shall install, calibrate, maintain and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with §60.662(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each distillation unit within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5$  °C,

whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

(d) Monitor and record the periods of operation of the boiler or process heater if the design heat input capacity of the boiler or process heater is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(e) The owner or operator of an affected facility that seeks to comply with the TRE index value limit specified under §60.662(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, and a specific gravity monitoring device having an accuracy of  $\pm 0.02$  specific gravity units, each equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, or

(ii) An organic monitoring device used to monitor organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of  $\pm 10$  percent, and a carbon bed temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, both equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(f) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under §60.662 with control devices other than incinerator, boiler, process heater, or flare; or recovery device other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

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#### §60.664 Test methods and procedures.

(a) For the purpose of demonstrating compliance with §60.662, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under §60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under §60.662(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration (%O<sub>2d</sub>) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken.

The TOC concentration corrected to 3 percent O<sub>2</sub> (C<sub>c</sub>) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

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where:

C<sub>c</sub> = Concentration of TOC corrected to 3 percent O<sub>2</sub>, dry basis, ppm by volume.

C<sub>TOC</sub> = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

%O<sub>2d</sub> = Concentration of O<sub>2</sub>, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used then the samples shall be taken at 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

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where:

R = Emission reduction, percent by weight.

$E_i$  = Mass rate of TOC entering the control device, kg/hr (lb/hr).

$E_o$  = Mass rate of TOC discharged to the atmosphere, kg/hr (lb/hr).

(iii) The mass rates of TOC ( $E_i$ ,  $E_o$ ) shall be computed using the following equations:

$$E_i = K_2 \left( \sum_{j=1}^n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left( \sum_{j=1}^n C_{oj} M_{oj} \right) Q_o$$

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where:

$C_i$ ,  $C_o$  = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppm by volume.

$M_i$ ,  $M_o$  = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

$Q_i$ ,  $Q_o$  = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/min).

$K_2 = 2.494 \times 10^{-6}$  (1/ppm)(g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

$= 1.557 \times 10^{-7}$  (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

(iv) The TOC concentration ( $C_{TOC}$ ) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^n C_j$$

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where:

$C_{TOC}$  = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$C_j$  = Concentration of sample components "j", dry basis, ppm by volume.

n = Number of components in the sample.

(c) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with §60.662(a), the requirement for an initial performance

test is waived, in accordance with §60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(d) When a flare is used to seek to comply with §60.662(b), the flare shall comply with the requirements of §60.18.

(e) The following test methods in appendix A to this part, except as provided under §60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under §60.662(b) and for determining the process vent stream TRE index value to determine compliance under §60.662(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in §60.664(e)(2) and (3) shall be, except for the situations outlined in paragraph (e)(1)(ii) of this section, prior to the inlet of any control device, prior to any post-distillation dilution of the stream with air, and prior to any post-distillation introduction of halogenated compounds into the process vent stream. No transverse site selection method is needed for vents smaller than 10 centimeters (4 inches) in diameter.

(ii) If any gas stream other than the distillation vent stream from the affected facility is normally conducted through the final recovery device.

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which the nondistillation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nondistillation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nondistillation stream to determine the concentration of TOC in the distillation vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in §60.664(e)(4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946-77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left( \sum_{j=1}^n C_j H_j \right)$$

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where:

$H_T$  = Net heating value of the sample, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

$K_1 = 1.74 \times 10^{-7}$  (1/ppm) (g-mole/scm) (MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.  
 $= 1.03 \times 10^{-11}$  (1/ppm) (lb-mole/scf) (Btu/kcal) (English units) where standard temperature for (lb-mole/scf) is 68 °F.

$C_j$  = Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) as indicated in §60.664(e)(2).

$H_j$  = Net heat of combustion of compound j, kcal/(g-mole) [kcal/(lb-mole)], based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

The heats of combustion of vent stream components would be required to be determined using ASTM D2382-76 (incorporation by reference as specified in §60.17 of this part) if published values are not available or cannot be calculated.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \left[ \sum_{j=1}^n C_j M_j \right] Q_s$$

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where:

$E_{TOC}$  = Measured emission rate of TOC, kg/hr (lb/hr).

$K_2 = 2.494 \times 10^{-6}$  (1/ppm) (g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

$= 1.557 \times 10^{-7}$  (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

$C_j$  = Concentration on a wet basis of compound j in ppm, as measured by Method 18 as indicated in §60.664(e)(2).

$M_j$  = Molecular weight of sample j, g/g-mole (lb/lb-mole).

$Q_s$  = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(f) For purposes of complying with §60.662(c) the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) and the flare equation in (e)(2) of this section and selecting the lower of the two values.



(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[ a + b(Q_s) + c(Q_s)^{0.88} + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

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(i) Where for a vent stream flow rate that is greater than or equal to 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q<sub>s</sub> = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

H<sub>T</sub> = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q<sub>s</sub>.

Y<sub>s</sub> = Q<sub>s</sub> for all vent stream categories listed in table 1 except for Category E vent streams where Y<sub>s</sub> = Q<sub>s</sub>H<sub>T</sub>/3.6.

E<sub>TOC</sub> = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from table 1.

TABLE 1. DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS  
CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) < 3.5 OR IF  
0 ≤ NET HEATING VALUE (Btu/scf) < 94:

Q <sub>s</sub> = Vent Stream Flow rate scm/min (scf/min)	a	b	c	d	e	f
14.2 ≤ Q <sub>s</sub> < 18.8 (501 ≤ Q <sub>s</sub> < 664)	18.84468 (41.54434)	0.26742 (0.010596)	-0.20044 (-0.019194)	0 (0)	0 (0)	0.01025 (0.003603)
18.8 ≤ Q <sub>s</sub> < 699 (664 < Q <sub>s</sub> < 24,700)	19.66668 (43.35694)	0.26742 (0.010596)	-0.25332 (-0.024258)	0 (0)	0 (0)	0.01025 (0.003603)
699 ≤ Q <sub>s</sub> < 1400 (24,700 < Q <sub>s</sub> < 49,000)	39.19213 (86.40297)	0.26062 (0.018145)	-0.25332 (-0.024258)	0 (0)	0 (0)	0.01448 (0.005376)
1400 ≤ Q <sub>s</sub> < 2100 (49,000 < Q <sub>s</sub> < 74,000)	58.71768 (129.4490)	0.30511 (0.019050)	-0.25332 (-0.024258)	0 (0)	0 (0)	0.01775 (0.006585)
2100 ≤ Q <sub>s</sub> < 2600 (74,000 < Q <sub>s</sub> < 99,000)	79.24323 (172.4950)	0.31582 (0.019718)	-0.25332 (-0.024258)	0 (0)	0 (0)	0.02049 (0.007602)
2600 ≤ Q <sub>s</sub> < 3500 (99,000 < Q <sub>s</sub> < 120,000)	97.76879 (215.5411)	0.32439 (0.020263)	-0.25332 (-0.024258)	0 (0)	0 (0)	0.02291 (0.008500)

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## APPENDIX A- NSPS SUBPART NNN

DESIGN CATEGORY A2.

FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE  $< 3.5$  (MJ/scm)  
OR IF NET HEATING VALUE  $< 94$  (Btu/scf):

$Q_g$ = Vent Stream Flow rate scm/min(scfd/min)	a	b	c	d	e	f
$14.2 \leq Q_g \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01825
$(501 \leq Q_g \leq 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_g \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01825
$(664 < Q_g \leq 24,700)$	(43.35894)	(0.016696)	(-0.024359)	(0)	(0)	(0.003803)
$699 < Q_g \leq 1400$	39.19213	0.29082	-0.25332	0	0	0.01449
$(24,700 < Q_g \leq 49,000)$	(66.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_g \leq 3100$	98.71768	0.30511	-0.25332	0	0	0.01775
$(49,000 < Q_g \leq 74,000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$3100 < Q_g \leq 2690$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74,000 < Q_g \leq 99,000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2690 < Q_g \leq 3530$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99,000 < Q_g \leq 120,000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008509)

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF  $0 \leq$  NET HEATING VALUE (MJ/scm)  $\leq 0.48$   
OR IF  $0 \leq$  NET HEATING VALUE (Btu/scf)  $\leq 13$ :

$Q_g$ = Vent Stream Flow rate scm/min(scfd/min)	a	b	c	d	e	f
$14.2 \leq Q_g \leq 1340$	8.54245	0.10555	0.09030	-0.17109	0	0.01025
$(501 \leq Q_g \leq 47,300)$	(18.85268)	(0.006901)	(0.008647)	(-0.00039762)	(0)	(0.003803)
$1340 < Q_g \leq 2090$	18.94386	0.11470	0.09030	-0.17109	0	0.01449
$(47,300 < Q_g \leq 95,000)$	(37.35443)	(0.0071614)	(0.008647)	(-0.00039762)	(0)	(0.005376)
$2090 < Q_g \leq 4940$	25.34526	0.12042	0.09030	-0.17109	0	0.01775
$(95,000 < Q_g \leq 143,000)$	(55.67620)	(0.0075185)	(0.008647)	(-0.00039762)	(0)	(0.006585)

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## APPENDIX A- NSPS SUBPART NNN

DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF  $0.48 < \text{NET HEATING VALUE (MJ/scm)} \leq 1.9$   
OR IF  $13 < \text{NET HEATING VALUE (Btu/scf)} \leq 51$ :

$Q_g$ = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_g \leq 1340$ (501 $\leq Q_g \leq 47,300$ )	9.25233 (20.39788)	0.05105 (0.003812)	0.31937 (0.00682)	-0.16181 (-0.00637605)	0 (0)	0.01025 (0.003803)
$1340 < Q_g \leq 2690$ (47,300 $< Q_g \leq 95,000$ )	18.35363 (40.48446)	0.06635 (0.004143)	0.31837 (0.00682)	-0.16181 (-0.00637605)	0 (0)	0.01449 (0.005376)
$2690 < Q_g \leq 4040$ (95,000 $< Q_g \leq 143,000$ )	27.47492 (60.57121)	0.06965 (0.004349)	0.31937 (0.00682)	-0.16181 (-0.00637605)	0 (0)	0.01775 (0.00585)

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF  $1.9 < \text{NET HEATING VALUE (MJ/scm)} \leq 3.6$   
OR IF  $51 < \text{NET HEATING VALUE (Btu/scf)} \leq 97$ :

$Q_g$ = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_g \leq 1180$ (501 $\leq Q_g \leq 41,700$ )	6.67668 (14.72362)	0.06943 (0.004335)	0.02582 (0.002472)	0 (0)	0 (0)	0.01625 (0.003803)
$1180 < Q_g \leq 2370$ (41,700 $< Q_g \leq 83,700$ )	13.21633 (29.13672)	0.07546 (0.004711)	0.02582 (0.002472)	0 (0)	0 (0)	0.01449 (0.005376)
$2370 < Q_g \leq 3550$ (83,700 $< Q_g \leq 125,000$ )	19.75398 (43.54962)	0.07922 (0.004946)	0.02582 (0.002472)	0 (0)	0 (0)	0.01775 (0.00585)

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DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF  $\text{NET HEATING VALUE} > 3.6 \text{ MJ/scm}$   
OR IF  $\text{NET HEATING VALUE} > 97 \text{ (Btu/scf)}$ :

$Q_g$ = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Y_g \leq 1180$ (501 $\leq Y_g \leq 41,700$ )	6.67668 (14.72362)	0 (0)	0 (0)	-0.00707 (-0.000164)	0.02220 (0.001174)	0.01025 (0.003803)
$1180 < Y_g \leq 2370$ (41,700 $< Y_g \leq 83,700$ )	13.21633 (29.13672)	0 (0)	0 (0)	-0.00707 (-0.000164)	0.02412 (0.001276)	0.01449 (0.005376)
$2370 < Y_g \leq 3550$ (83,700 $< Y_g \leq 125,000$ )	19.75398 (43.54962)	0 (0)	0 (0)	-0.00707 (-0.000164)	0.02533 (0.001340)	0.01775 (0.00585)

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(ii) Where for a vent stream flow rate that is less than 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

$Q_g$  = 14.2 scm/min (501 scf/min).

$H_T = (\text{FLOW}) (HVAL)/Q_g$ .

Where the following inputs are used:

FLOW = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

HVAL = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of  $Q_s$ .

$Y_s = Q_s$  for all vent stream categories listed in table 1 except for Category E vent streams where  $Y_s = Q_s H_T / 3.6$ .

$E_{TOC}$  = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients

The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[ a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e \right]$$

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where:

TRE = TRE index value.

$E_{TOC}$  = Hourly emissions of TOC, kg/hr (lb/hr).

$Q_s$  = Vent stream flow rate, scm/min (scf/min), at a standard temperature of 20 °C (68 °F).

$H_T$  = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of  $Q_s$ .

a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from table 2.

**TABLE 2—DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE**

	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>e</b>
$H_T < 11.2$ MJ/scm	2.25	0.288	-0.193	-0.0051	2.08
( $H_T < 301$ Btu/scf)	(0.140)	(0.0367)	(-0.000448)	(-0.0051)	(4.59)
$H_T \geq 11.2$ MJ/scm	0.309	0.0619	-0.0043	-0.0034	2.08
( $H_T \geq 301$ Btu/scf)	(0.0193)	(0.00788)	(-0.0000010)	(-0.0034)	(4.59)


(g) Each owner or operator of an affected facility seeking to comply with §60.660(c)(4) or §60.662(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by §60.664 in order to determine compliance with §60.662(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 8.0 and the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §§60.8 and 60.664 and shall comply with §§60.663, 60.664 and 60.665. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(h) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with §60.660(c)(6) shall use Method 2, 2A, 2C, or 2D as appropriate, for determination of volumetric flow rate.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

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#### **§60.665 Reporting and recordkeeping requirements.**

(a) Each owner or operator subject to §60.662 shall notify the Administrator of the specific provisions of §60.662 (§60.662 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by §60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of §60.662 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by §60.664 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under §60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with §60.662(a), a report containing performance test data need not be submitted, but a report containing the information in §60.665(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.662(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in §60.664(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in §60.664(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.662(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.662(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.662(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally, or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally), or

(iv) As an alternative to §60.665(b)(4) ((i), (ii) or (iii)), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.663 (a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with §60.662(a), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.662(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance with §60.662(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test at which compliance with §60.662(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.662(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §60.662(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up to date, readily accessible continuous records of the flow indication specified under §60.663(a)(2), §60.663(b)(2) and §60.663(c)(1), as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater to comply with §60.662(a) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements.)

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under §60.663(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.663(e), as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with §60.662(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side)

condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(h) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with §60.662(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or a distillation unit;

(2) Any recalculation of the TRE index value performed pursuant to §60.664(g); and

(3) The results of any performance test performed pursuant to the methods and procedures required by §60.664(e).

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in §60.660(c)(6) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.008 scm/min (0.3 scf/min) and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in §60.660(c)(5) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(k) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in §60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of §60.660 (c)(4), (c)(5), or (c)(6) or §60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §60.665 (c) and (g).

(2) All periods recorded under §60.665(d) when the vent stream is diverted from the control device or has no flow rate.



(3) All periods recorded under §60.665(e) when the boiler or process heater was not operating.

(4) All periods recorded under §60.665(f) in which the pilot flame of the flare was absent.

(5) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in §60.660(c)(6), including a measurement of the new vent stream flow rate, as recorded under §60.665(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed with the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and  $E_{\text{TOC}}$ . The performance test is subject to the requirements of §60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low capacity exemption status in §60.660(c)(5), the facility must begin compliance with the requirements set forth in §60.662.

(6) Any change in equipment or process operation, as recorded under paragraph (j) of this section, that increases the design production capacity above the low capacity exemption level in §60.660(c)(5) and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and  $E_{\text{TOC}}$ . The performance test is subject to the requirements of §60.8. The facility must begin compliance with the requirements set forth in §60.660(d) or §60.662. If the facility chooses to comply with §60.662, the facility may qualify for an exemption in §60.660(c)(4) or (6).

(7) Any recalculation of the TRE index value, as recorded under §60.665(h).


(m) The requirements of §60.665(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with §60.665(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with §60.660(c)(5) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with §60.660(c)(6) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in §60.664.

(p) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under §60.662 other than as provided under §60.663(a), (b), (c) and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 60 FR 58237, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000; 65 FR 78279, Dec. 14, 2000; 79 FR 11251, Feb. 27, 2014]

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## **§60.666 Reconstruction.**

For purposes of this subpart “fixed capital cost of the new components,” as used in §60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period

following December 30, 1983. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

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**§60.667 Chemicals affected by subpart NNN.**

Chemical name	CAS No.*
Acetaldehyde	75-07-0
Acetaldol	107-89-1
Acetic acid	64-19-7
Acetic anhydride	108-24-7
Acetone	67-64-1
Acetone cyanohydrin	75-86-5
Acetylene	74-86-2
Acrylic acid	79-10-7
Acrylonitrile	107-13-1
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alcohols, C-11 or lower, mixtures	
Alcohols, C-12 or higher, mixtures	
Allyl chloride	107-05-1
Amylene	513-35-9
Amylenes, mixed	
Aniline	62-53-3
Benzene	71-43-2
Benzenesulfonic acid	98-11-3
Benzenesulfonic acid C <sub>10-16</sub> -alkyl derivatives, sodium salts	68081-81-2
Benzoic acid, tech	65-85-0
Benzyl chloride	100-44-7
Biphenyl	92-52-4
Bisphenol A	80-05-7

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Brometone	76-08-4
1,3-Butadiene	106-99-0
Butadiene and butene fractions	
n-Butane	106-97-8
1,4-Butanediol	110-63-4
Butanes, mixed	
1-Butene	106-98-9
2-Butene	25167-67-3
Butenes, mixed	
n-Butyl acetate	123-86-4
Butyl acrylate	141-32-2
n-Butyl alcohol	71-36-3
sec-Butyl alcohol	78-92-2
tert-Butyl alcohol	75-65-0
Butylbenzyl phthalate	85-68-7
Butylene glycol	107-88-0
tert-Butyl hydroperoxide	75-91-2
2-Butyne-1,4-diol	110-65-6
Butyraldehyde	123-72-8
Butyric anhydride	106-31-0
Caprolactam	105-60-2
Carbon disulfide	75-15-0
Carbon tetrabromide	558-13-4
Carbon tetrachloride	56-23-5
Chlorobenzene	108-90-7
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine	1912-24-9
Chloroform	67-66-3
p-Chloronitrobenzene	100-00-5
Chloroprene	126-99-8
Citric acid	77-92-9

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Crotonaldehyde	4170-30-0
Crotonic acid	3724-65-0
Cumene	98-82-8
Cumene hydroperoxide	80-15-9
Cyanuric chloride	108-77-0
Cyclohexane	110-82-7
Cyclohexane, oxidized	68512-15-2
Cyclohexanol	108-93-0
Cyclohexanone	108-94-1
Cyclohexanone oxime	100-64-1
Cyclohexene	110-83-8
1,3-Cyclopentadiene	542-92-7
Cyclopropane	75-19-4
Diacetone alcohol	123-42-2
Dibutanized aromatic concentrate	
1,4-Dichlorobutene	110-57-6
3,4-Dichloro-1-butene	64037-54-3
Dichlorodifluoromethane	75-71-8
Dichlorodimethylsilane	75-78-5
Dichlorofluoromethane	75-43-4
-Dichlorohydrin	96-23-1
Diethanolamine	111-42-2
Diethylbenzene	25340-17-4
Diethylene glycol	111-46-6
Di-n-heptyl-n-nonyl undecyl phthalate	85-68-7
Di-isodecyl phthalate	26761-40-0
Diisononyl phthalate	28553-12-0
Dimethylamine	124-40-3
Dimethyl terephthalate	120-61-6
2,4-Dinitrotoluene	121-14-2

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2,4-(and 2,6)-dinitrotoluene	121-14-2
	606-20-2
Dioctyl phthalate	117-81-7
Dodecene	25378-22-7
Dodecylbenzene, non linear	
Dodecylbenzenesulfonic acid	27176-87-0
Dodecylbenzenesulfonic acid, sodium salt	25155-30-0
Epichlorohydrin	106-89-8
Ethanol	64-17-5
Ethanolamine	141-43-5
Ethyl acetate	141-78-6
Ethyl acrylate	140-88-5
Ethylbenzene	100-41-4
Ethyl chloride	75-00-3
Ethyl cyanide	107-12-0
Ethylene	74-85-1
Ethylene dibromide	106-93-4
Ethylene dichloride	107-06-2
Ethylene glycol	107-21-1
Ethylene glycol monobutyl	111-76-2
Ethylene glycol monoethyl ether	110-80-5
Ethylene glycol monoethyl ether acetate	111-15-9
Ethylene glycol monomethyl ether	109-86-4
Ethylene oxide	75-21-8
2-Ethylhexanal	26266-68-2
2-Ethylhexyl alcohol	104-76-7
(2-Ethylhexyl) amine	104-75-6
Ethylmethylbenzene	25550-14-5
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547-17-8
Formaldehyde	50-00-0

**APPENDIX A- NSPS SUBPART NNN**

Glycerol	56-81-5
n-Heptane	142-82-5
Heptenes (mixed)	
Hexadecyl chloride	
Hexamethylene diamine	124-09-4
Hexamethylene diamine adipate	3323-53-3
Hexamethylenetetramine	100-97-0
Hexane	110-54-3
2-Hexenedinitrile	13042-02-9
3-Hexenedinitrile	1119-85-3
Hydrogen cyanide	74-90-8
Isobutane	75-28-5
Isobutanol	78-83-1
Isobutylene	115-11-7
Isobutyraldehyde	78-84-2
Isodecyl alcohol	25339-17-7
Isooctyl alcohol	26952-21-6
Isopentane	78-78-4
Isophthalic acid	121-91-5
Isoprene	78-79-5
Isopropanol	67-63-0
Ketene	463-51-4
Linear alcohols, ethoxylated, mixed	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed	
Linear alcohols, sulfated, sodium salt, mixed	
Linear alkylbenzene	123-01-3
Magnesium acetate	142-72-3
Maleic anhydride	108-31-6
Melamine	108-78-1
Mesityl oxide	141-79-7

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Methacrylonitrile	126-98-7
Methanol	67-56-1
Methylamine	74-89-5
ar-Methylbenzenediamine	25376-45-8
Methyl chloride	74-87-3
Methylene chloride	75-09-2
Methyl ethyl ketone	78-93-3
Methyl iodide	74-88-4
Methyl isobutyl ketone	108-10-1
Methyl methacrylate	80-62-6
2-Methylpentane	107-83-5
1-Methyl-2-pyrrolidone	872-50-4
Methyl tert-butyl ether	
Naphthalene	91-20-3
Nitrobenzene	98-95-3
1-Nonene	27215-95-8
Nonyl alcohol	143-08-8
Nonylphenol	25154-52-3
Nonylphenol, ethoxylated	9016-45-9
Octene	25377-83-7
Oil-soluble petroleum sulfonate, calcium salt	
Oil-soluble petroleum sulfonate, sodium salt	
Pentaerythritol	115-77-5
n-Pentane	109-66-0
3-Pentenitrile	4635-87-4
Pentenenes, mixed	109-67-1
Perchloroethylene	127-18-4
Phenol	108-95-2
1-Phenylethyl hydroperoxide	3071-32-7
Phenylpropane	103-65-1

**APPENDIX A- NSPS SUBPART NNN**


Phosgene	75-44-5
Phthalic anhydride	85-44-9
Propane	74-98-6
Propionaldehyde	123-38-6
Propionic acid	79-09-4
Propyl alcohol	71-23-8
Propylene	115-07-1
Propylene chlorohydrin	78-89-7
Propylene glycol	57-55-6
Propylene oxide	75-56-9
Sodium cyanide	143-33-9
Sorbitol	50-70-4
Styrene	100-42-5
Terephthalic acid	100-21-0
1,1,2,2-Tetrachloroethane	79-34-5
Tetraethyl lead	78-00-2
Tetrahydrofuran	109-99-9
Tetra (methyl-ethyl) lead	
Tetramethyl lead	75-74-1
Toluene	108-88-3
Toluene-2,4-diamine	95-80-7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471-62-5
Tribromomethane	75-25-2
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene	79-01-6
Trichlorofluoromethane	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Triethanolamine	102-71-6
Triethylene glycol	112-27-6



Vinyl acetate	108-05-4
Vinyl chloride	75-01-4
Vinylidene chloride	75-35-4
m-Xylene	108-38-3
o-Xylene	95-47-6
p-Xylene	106-42-3
Xylenes (mixed)	1330-20-7
m-Xylenol	576-26-1

\*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[55 FR 26942, June 29, 1990, as amended at 60 FR 58237, 58238, Nov. 27, 1995]

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#### **§60.668 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under §111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §60.663(e).

## Subpart RRR—Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

SOURCE: 58 FR 45962, Aug. 31, 1993, unless otherwise noted.

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### **§60.700 Applicability and designation of affected facility.**

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in §60.707 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after June 29, 1990:

(1) Each reactor process not discharging its vent stream into a recovery system.

(2) Each combination of a reactor process and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any reactor process that is designed and operated as a batch operation is not an affected facility.

(2) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§60.702(c); 60.704 (d), (e), and (f); and 60.705 (g), (l)(1), (l)(6), and (t).

(3) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than 1 gigagram per year (1,100 tons per year) is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in §60.705 (i), (l)(5), and (n).

(4) Each affected facility operated with a vent stream flow rate less than 0.011 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in §§60.704(g) and 70.705 (h), (l)(4), and (o).

(5) If the vent stream from an affected facility is routed to a distillation unit subject to subpart NNN and has no other releases to the air except for a pressure relief valve, the facility is exempt from all provisions of this subpart except for §60.705(r).

(6) Any reactor process operating as part of a process unit which produces beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(7) Any reactor process that is subject to the provisions of subpart DDD is not an affected facility.

(8) Each affected facility operated with a concentration of total organic compounds (TOC) (less methane and ethane) in the vent stream less than 300 ppmv as measured by Method 18 or a concentration of TOC in the vent stream less than 150 ppmv as measured by Method 25A is exempt from all provisions of this subpart except for the test method and procedure and the reporting and recordkeeping requirements in §60.704(h) and paragraphs (j), (l)(8), and (p) of §60.705.

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§60.702 through 60.705 and 60.708. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(2), (4), and (8) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

(NOTE: The intent of these standards is to minimize emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of TOC, measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.)

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

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## **§60.701 Definitions.**

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

*Batch operation* means any noncontinuous reactor process that is not characterized by steady-state conditions and in which reactants are not added and products are not removed simultaneously.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

*By compound* means by individual stream components, not carbon equivalents.

*Car-seal* means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

*Combustion device* means an individual unit of equipment, such as an incinerator, flare, boiler, or process heater, used for combustion of a vent stream discharged from the process vent.

*Continuous recorder* means a data recording device recording an instantaneous data value at least once every 15 minutes.

*Flame zone* means the portion of the combustion chamber in a boiler occupied by the flame envelope.

*Flow indicator* means a device which indicates whether gas flow is present in a line.

*Halogenated vent stream* means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

*Incinerator* means an enclosed combustion device that is used for destroying organic compounds. If there is energy recovery, the energy recovery section and the combustion chambers are not of integral design. That is, the energy recovery section and the combustion section are not physically formed into one manufactured or assembled unit but are joined by ducts or connections carrying flue gas.

*Primary fuel* means the fuel fired through a burner or a number of similar burners. The primary fuel provides the principal heat input to the device, and the amount of fuel is sufficient to sustain operation without the addition of other fuels.

*Process heater* means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

*Process unit* means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in §60.707. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

*Product* means any compound or chemical listed in §60.707 which is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

*Reactor processes* are unit operations in which one or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

*Recovery device* means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

*Recovery system* means an individual recovery device or series of such devices applied to the same vent stream.

*Relief valve* means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge results from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

*Secondary fuel* means a fuel fired through a burner other than a primary fuel burner. The secondary fuel may provide supplementary heat in addition to the heat provided by the primary fuel.

*Total organic compounds or TOC* means those compounds measured according to the procedures in §60.704(b)(4). For the purposes of measuring molar composition as required in §60.704(d)(2)(i) and §60.704(d)(2)(ii), hourly emission rate as required in §60.704(d)(5) and §60.704(e), and TOC concentration as required in §60.705(b)(4) and §60.705(f)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded.

*Total resource effectiveness or TRE index value* means a measure of the supplemental total resource requirement per unit reduction of TOC associated with a vent stream from an affected reactor process facility, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equation given under §60.704(e).

*Vent stream* means any gas stream discharged directly from a reactor process to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks.

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#### **§60.702 Standards.**

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §§60.8 and 60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of §60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

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#### **§60.703 Monitoring of emissions and operations.**

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under §60.702(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange is encountered.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the incinerator at least once every 15 minutes for each affected facility, except as provided in paragraph (a)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the incinerator, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with §60.702(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the flare at least once every 15 minutes for each affected facility, except as provided in paragraph (b)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the flare, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with §60.702(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow diverted from being routed to the boiler or process heater at least once every 15 minutes for each affected facility, except as provided in paragraph (c)(1)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the boiler or process heater, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) design heat input capacity. Any vent stream introduced with primary fuel into a boiler or process heater is exempt from this requirement.

(d) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under §60.702(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, and a specific gravity monitoring device having an accuracy of  $\pm 0.02$  specific gravity units, each equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of  $\pm 10$  percent, and a carbon bed temperature monitoring device having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater, both equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under §60.702 with a control device other than an incinerator, boiler, process heater, or flare; or a recovery device other than an absorber, condenser, or carbon adsorber, shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

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**§60.704 Test methods and procedures.**

(a) For the purpose of demonstrating compliance with §60.702, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under §60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under §60.702(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration (%O<sub>2a</sub>) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O<sub>2</sub> (C<sub>c</sub>) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2a}}$$

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where:

C<sub>c</sub> = Concentration of TOC corrected to 3 percent O<sub>2</sub>, dry basis, ppm by volume.

C<sub>TOC</sub> = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

%O<sub>2a</sub> = Concentration of O<sub>2</sub>, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{1 - \frac{C_{out}}{C_{in}}}{1} \times 100$$

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where:

R = Emission reduction, percent by weight.



$E_i$  = Mass rate of TOC entering the control device, kg TOC/hr.

$E_o$  = Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC ( $E_i$ ,  $E_o$ ) shall be computed using the following equations:

$$E_i = K_2 \sum_{j=1}^n C_{ij} M_j Q_i$$

$$E_o = K_2 \sum_{j=1}^n C_{oj} M_j Q_o$$

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where:

$C_{i1}$ ,  $C_{o1}$  = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppm by volume.

$M_{i1}$ ,  $M_{o1}$  = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

$Q_i$ ,  $Q_o$  = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/hr).

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

(iv) The TOC concentration ( $C_{TOC}$ ) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^n C_j$$

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where:

$C_{TOC}$  = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$C_j$  = Concentration of sample components "j", dry basis, ppm by volume.

n = Number of components in the sample.

(5) The requirement for an initial performance test is waived, in accordance with §60.8(b), for the following:

(i) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek compliance with §60.702(a).

(ii) When a vent stream is introduced into a boiler or process heater with the primary fuel.

(iii) The Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(6) For purposes of complying with the 98 weight-percent reduction in §60.702(a), if the vent stream entering a boiler or process heater with a design capacity less than 44 MW (150 million Btu/hour) is introduced with the combustion air or as secondary fuel, the weight-percent reduction of TOC (minus methane and ethane) across the combustion device shall be determined by comparing the TOC (minus methane and ethane) in all combusted vent streams, primary fuels, and secondary fuels with the TOC (minus methane and ethane) exiting the combustion device.

(c) When a flare is used to seek to comply with §60.702(b), the flare shall comply with the requirements of §60.18.

(d) The following test methods in appendix A to this part, except as provided under §60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under §60.702(b) and for determining the process vent stream TRE index value to determine compliance under §§60.700(c)(2) and 60.702(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in §60.704 (d)(2) and (d)(3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this section, prior to the inlet of any control device, prior to any postreactor dilution of the stream with air, and prior to any postreactor introduction of halogenated compounds into the process vent stream. No traverse site selection method is needed for vents smaller than 4 inches in diameter.

(ii) If any gas stream other than the reactor vent stream is normally conducted through the final recovery device:

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor stream or stream from a nonaffected reactor process is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any vent stream and at the outlet of the final recovery device.

(C) This efficiency of the final recovery device shall be applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of any nonreactor stream or stream from a nonaffected reactor process to determine the concentration of TOC in the reactor process vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in §60.704(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946-77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$E_{H_2} = K_1 \sum_{j=1}^n C_j H_j + B_{ws}$$

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where:

$H_T$  = Net heating value of the sample, MJ/scm, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of  $Q_s$  (vent stream flow rate).

$K_1$  = Constant,  $1.740 \times 10^{-7}$  (l/ppm) (g-mole/scm) (MJ/kcal), where standard temperature for (g-mole/scm) is 20 °C.

$C_j$  = Concentration on a dry basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) as indicated in §60.704(d)(2).

$H_j$  = Net heat of combustion of compound j, kcal/g-mole, based on combustion at 25 °C and 760 mm Hg. The heats of combustion of vent stream components would be required to be determined using ASTM D2382-76 or 88 or D4809-95 (incorporation by reference as specified in §60.17 of this part) if published values are not available or cannot be calculated.

$B_{ws}$  = Water vapor content of the vent stream, proportion by volume.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \sum_{j=1}^n C_j M_j Q_s$$

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where:

$E_{TOC}$  = Emission rate of TOC in the sample, kg/hr.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

$C_j$  = Concentration on a dry basis of compound j in ppm as measured by Method 18 as indicated in §60.704(d)(2).

$M_j$  = Molecular weight of sample j, g/g-mole.

$Q_s$  = Vent stream flow rate (dscm/min) at a temperature of 20 °C.

(6) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with §§60.700(c)(2) and 60.702(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) of this section and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[ a - b(Q_s)^{0.0001} - c(Q_s)^{-0.0001} + d(10^{-0.0001} - e(10^{-0.0001} - f(Y_s)^{0.0001} - g(Y_s)^{-0.0001}) \right]$$

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(i) Where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal to 14.2 scm/min:

TRE = TRE index value.

$Q_s$  = Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

$H_T$  = Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of  $Q_s$ .

$Y_s = Q_s$  for all vent stream categories listed in table 1 except for Category E vent streams where  $Y_s = (Q_s)(H_T)/3.6$ .

$E_{TOC}$  = Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

**TABLE 1—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES**

	a	b	c	d	e	f
<b>DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF <math>0 \leq \text{NET HEATING VALUE (MJ/scm)} \leq 3.5</math>: <math>Q_s = \text{Vent Stream Flow Rate (scm/min)}</math></b>						
$14.2 \leq Q_s \leq 18.8$	19.18370	0.27580	0.75762	-0.13064	0	0.01025
$18.8 < Q_s \leq 699$	20.00563	0.27580	0.30387	-0.13064	0	0.01025
$699 < Q_s \leq 1,400$	39.87022	0.29973	0.30387	-0.13064	0	0.01449
$1,400 < Q_s \leq 2,100$	59.73481	0.31467	0.30387	-0.13064	0	0.01775
$2,100 < Q_s \leq 2,800$	79.59941	0.32572	0.30387	-0.13064	0	0.02049
$2,800 < Q_s \leq 3,500$	99.46400	0.33456	0.30387	-0.13064	0	0.02291
<b>DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm) <math>&gt; 3.5</math>: <math>Q_s = \text{Vent Stream Flow Rate (scm/min)}</math></b>						
$14.2 < Q_s \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$18.8 < Q_s \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$699 < Q_s \leq 1,400$	39.19213	0.29062	-0.25332	0	0	0.01449
$1,400 < Q_s \leq 2,100$	58.71768	0.30511	-0.25332	0	0	0.01775

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2,100<Q <sub>s</sub> ≤2,800	78.24323	0.31582	-0.25332	0	0	0.02049
2,800<Q <sub>s</sub> ≤3,500	97.76879	0.32439	-0.25332	0	0	0.02291
<b>DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤0.48: Q<sub>s</sub> = Vent Stream Flow Rate (scm/min)</b>						
14.2≤Q <sub>s</sub> ≤1,340	8.54245	0.10555	0.09030	-0.17109	0	0.01025
1,340<Q <sub>s</sub> ≤2,690	16.94386	0.11470	0.09030	-0.17109	0	0.01449
2,690<Q <sub>s</sub> ≤4,040	25.34528	0.12042	0.09030	-0.17109	0	0.01775
<b>DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48&lt;NET HEATING VALUE (MJ/scm)≤1.9: Q<sub>s</sub> = Vent Stream Flow Rate (scm/min)</b>						
14.2≤Q <sub>s</sub> ≤1,340	9.25233	0.06105	0.31937	-0.16181	0	0.01025
1,340<Q <sub>s</sub> ≤2,690	18.36363	0.06635	0.31937	-0.16181	0	0.01449
2,690<Q <sub>s</sub> ≤4,040	27.47492	0.06965	0.31937	-0.16181	0	0.01775
<b>DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9&lt;NET HEATING VALUE (MJ/scm)≤3.6: Q<sub>s</sub> = Vent Stream Flow Rate (scm/min)</b>						
14.2≤Q <sub>s</sub> ≤1,180	6.67868	0.06943	0.02582	0	0	0.01025
1,180<Q <sub>s</sub> ≤2,370	13.21633	0.07546	0.02582	0	0	0.01449
2,370<Q <sub>s</sub> ≤3,550	19.75398	0.07922	0.02582	0	0	0.01755
<b>DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)&gt;3.6: Y<sub>s</sub> = Dilution Flow Rate (scm/min) = (Q<sub>s</sub>)(H<sub>T</sub>)/3.6</b>						
14.2≤Y <sub>s</sub> ≤1,180	6.67868	0	0	-0.00707	0.02220	0.01025
1,180<Y <sub>s</sub> ≤2,370	13.21633	0	0	-0.00707	0.02412	0.01449
2,370<Y <sub>s</sub> ≤3,550	19.75398	0	0	-0.00707	0.02533	0.01755

(ii) For a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE = TRE index value.

Q<sub>s</sub> = 14.2 scm/min.

H<sub>T</sub> = (FLOW)(HVAL)/14.2

where the following inputs are used:

FLOW = Vent stream flow rate (scm/min), at a standard temperature of 20 °C.

HVAL = Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in definition of Q<sub>s</sub>.

Y<sub>s</sub> = 14.2 scm/min for all vent streams except for Category E vent streams, where Y<sub>s</sub> = (14.2)(H<sub>T</sub>)/3.6.

$E_{\text{TOC}}$  = Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$\text{TRE} = \frac{1}{E_{\text{TOC}}} \left[ a(Q) + b(Q)^2 + c(Q)(H_T) + d(E_{\text{TOC}}) + e \right]$$

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where:

TRE = TRE index value.

$E_{\text{TOC}}$  = Hourly emission rate of TOC reported in kg/hr.

$Q_s$  = Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

$H_T$  = Vent stream net heating value (MJ/scm) where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of  $Q_s$ .

a, b, c, d, and e are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 2.

**TABLE 2—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES**

	a	b	c	d	e
$H_T < 11.2$ MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
$H_T \geq 11.2$ MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08

(f) Each owner or operator of an affected facility seeking to comply with §60.700(c)(2) or §60.702(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change on the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by §60.704 in order to determine compliance with §60.702 (a) or (b). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §§60.8 and 60.704 and shall comply with §§60.703, 60.704 and 60.705. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(g) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with §60.700(c)(4) shall use Method 2, 2A, 2C, or 2D of appendix A to 40 CFR part 60, as appropriate, for determination of volumetric flow rate.

(h) Each owner or operator seeking to demonstrate that a reactor process vent stream has a TOC concentration for compliance with the low concentration exemption in §60.700(c)(8) shall conduct an initial test to measure TOC concentration.

(1) The sampling site shall be selected as specified in paragraph (d)(1)(i) of this section.

(2) Method 18 or Method 25A of part 60, appendix A shall be used to measure concentration.

(3) Where Method 18 is used to qualify for the low concentration exclusion in §60.700(c)(8), the procedures in §60.704(b)(4) (i) and (iv) shall be used to measure TOC concentration, and the procedures of §60.704(b)(3) shall be used to correct the TOC concentration to 3 percent oxygen. To qualify for the exclusion, the results must demonstrate that the concentration of TOC, corrected to 3 percent oxygen, is below 300 ppm by volume.

(4) Where Method 25A is used, the following procedures shall be used to calculate ppm by volume TOC concentration, corrected to 3 percent oxygen:

(i) Method 25A shall be used only if a single organic compound is greater than 50 percent of total TOC, by volume, in the reactor process vent stream. This compound shall be the principal organic compound.

(ii) The principal organic compound may be determined by either process knowledge or test data collected using an appropriate EPA Reference Method. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current reactor process vent stream conditions.

(iii) The principal organic compound shall be used as the calibration gas for Method 25A.

(iv) The span value for Method 25A shall be 300 ppmv.

(v) Use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A, corrected to 3 percent oxygen, is below 150 ppm by volume to qualify for the low concentration exclusion in §60.700(c)(8).

(vii) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (b)(3) of this section.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000]

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#### **§60.705 Reporting and recordkeeping requirements.**

(a) Each owner or operator subject to §60.702 shall notify the Administrator of the specific provisions of §60.702 (§60.702 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by §60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of §60.702 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by §60.704 no later than 180 days from initial start-up.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under §60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used or where the reactor process vent stream is introduced as the primary fuel to any size boiler or process heater to comply with §60.702(a), a report containing performance test data need not be submitted, but a report containing the information in §60.705(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in §60.704(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in §60.704(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes



and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted); or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally; or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration [and within 15 minutes of completion of any cooling cycle(s)], and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally); or

(iv) As an alternative to §60.705(b)(4) (i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.703 (a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with §60.702(a), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance with §60.702(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the bed during the most recent performance test at which compliance with §60.702(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr) where the vent stream is introduced with the combustion air or as a secondary fuel.

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §60.702(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep records of the following:

(1) Up-to-date, readily accessible continuous records of the flow indication specified under §60.703(a)(2)(i), §60.703(b)(2)(i) and §60.703(c)(1)(i), as well as up-to-date, readily accessible records of all periods and the duration when the vent stream is diverted from the control device.

(2) Where a seal mechanism is used to comply with §60.703(a)(2)(ii), §60.703(b)(2)(ii), and §60.703(c)(1)(ii), a record of continuous flow is not required. In such cases, the owner or operator shall keep up-to-date, readily accessible records of all monthly visual inspections of the seals as well as readily accessible records of all periods and the duration when the seal mechanism is broken, the bypass line valve position has changed, the serial number of the broken car-seal has changed, or when the key for a lock-and-key type configuration has been checked out.

(e) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under §60.703(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.703(d), as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with §60.702(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent or 5 °C greater, whichever is less stringent, than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with §60.702(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or reactors;

(2) Any recalculation of the TRE index value performed pursuant to §60.704(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by §60.704(d).

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in §60.700(c)(4) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.011 scm/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in §60.700(c)(3) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the low concentration exemption in §60.700(c)(8) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the concentration of the vent stream of the affected facility.

(k) Each owner or operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in §60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of §60.700 (c)(2), (c)(3), or (c)(4) or §60.702 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §60.705 (c), (f), and (g).

(2) All periods and duration recorded under §60.705(d) when the vent stream is diverted from the control device to the atmosphere.

(3) All periods recorded under §60.705(f) in which the pilot flame of the flare was absent.

(4) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in §60.700(c)(4), including a measurement of the new vent stream flow rate, as recorded under §60.705(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same

time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and  $E_{\text{TOC}}$ . The performance test is subject to the requirements of §60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in §60.700(c), except for the total resource effectiveness index greater than 8.0 exemption in §60.700(c)(2), the facility must begin compliance with the requirements set forth in §60.702.

(5) Any change in equipment or process operation, as recorded under paragraph (i) of this section, that increases the design production capacity above the low capacity exemption level in §60.700(c)(3) and the new capacity resulting from the change for the reactor process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and  $E_{\text{TOC}}$ . The performance test is subject to the requirements of §60.8. The facility must begin compliance with the requirements set forth in §60.702 or §60.700(d). If the facility chooses to comply with §60.702, the facility may qualify for an exemption under §60.700(c)(2), (4), or (8).

(6) Any recalculation of the TRE index value, as recorded under §60.705(g).

(7) All periods recorded under §60.705(d) in which the seal mechanism is broken or the by-pass line valve position has changed. A record of the serial number of the car-seal or a record to show that the key to unlock the bypass line valve was checked out must be maintained to demonstrate the period, the duration, and frequency in which the bypass line was operated.

(8) Any change in equipment or process operation that increases the vent stream concentration above the low concentration exemption level in §60.700(c)(8), including a measurement of the new vent stream concentration, as recorded under §60.705(j). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. If the vent stream concentration is above 300 ppmv as measured using Method 18 or above 150 ppmv as measured using Method 25A, a performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and  $E_{\text{TOC}}$ . The performance test is subject to the requirements of §60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in §60.700(c), except for the TRE index greater than 8.0 exemption in §60.700(c)(2), the facility must begin compliance with the requirements set forth in §60.702.

(m) The requirements of §60.705(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with §60.705(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(3) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(4) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in §60.704.

(p) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(8) must submit to the Administrator an initial report including a concentration measurement using the test method specified in §60.704.

(q) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under §60.702 other than as provided under §60.703 (a), (b), (c), and (d).

(r) Each owner or operator whose reactor process vent stream is routed to a distillation unit subject to subpart NNN and who seeks to demonstrate compliance with §60.700(c)(5) shall submit to the Administrator a process design description as part of the initial report. This process design description must be retained for the life of the process. No other records or reports would be required unless process changes are made.

(s) Each owner or operator who seeks to demonstrate compliance with §60.702 (a) or (b) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system.

(t) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(2) must maintain a record of the initial test for determining the total resource effectiveness index and the results of the initial total resource effectiveness index calculation.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

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#### **§60.706 Reconstruction.**

(a) For purposes of this subpart “fixed capital cost of the new components,” as used in §60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following June 29, 1990. For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(b) [Reserved]

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#### **§60.707 Chemicals affected by subpart RRR.**

<b>Chemical</b>	<b>CAS No.<sup>1</sup></b>
Acetaldehyde	75-07-0
Acetic acid	64-19-7
Acetic anhydride	108-24-7
Acetone	67-64-1
Acetone cyanohydrin	75-86-5
Acetylene	74-86-2
Acrylic acid	79-10-7

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Acrylonitrile	107-13-1
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alcohols, C-11 or lower, mixtures	
Alcohols, C-12 or higher, mixtures	
Alcohols, C-12 or higher, unmixed	
Allyl chloride	107-05-1
Amylene	513-35-9
Amylenes, mixed	
Aniline	62-53-3
Benzene	71-43-2
Benzenesulfonic acid	98-11-3
Benzenesulfonic acid C <sub>10-16</sub> -alkyl derivatives, sodium salts	68081-81-2
Benzyl chloride	100-44-7
Bisphenol A	80-05-7
Brometone	76-08-4
1,3-Butadiene	106-99-0
Butadiene and butene fractions	
n-Butane	106-97-8
1,4-Butanediol	110-63-4
Butanes, mixed	
1-Butene	106-98-9
2-Butene	25167-67-3
Butenes, mixed	
n-Butyl acetate	123-86-4
Butyl acrylate	141-32-2
n-Butyl alcohol	71-36-3
sec-Butyl alcohol	78-92-2
tert-Butyl alcohol	75-65-0
Butylbenzyl phthalate	85-68-7

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tert-Butyl hydroperoxide	75-91-2
2-Butyne-1,4-diol	110-65-6
Butyraldehyde	123-72-8
Butyric anhydride	106-31-0
Caprolactam	105-60-2
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Chloroacetic acid	79-11-8
Chlorobenzene	108-90-7
Chlorodifluoromethane	75-45-6
Chloroform	67-66-3
p-Chloronitrobenzene	100-00-5
Citric acid	77-92-9
Cumene	98-82-8
Cumene hydroperoxide	80-15-9
Cyanuric chloride	108-77-0
Cyclohexane	110-82-7
Cyclohexane, oxidized	68512-15-2
Cyclohexanol	108-93-0
Cyclohexanone	108-94-1
Cyclohexanone oxime	100-64-1
Cyclohexene	110-83-8
Cyclopropane	75-19-4
Diacetone alcohol	123-42-2
1,4-Dichlorobutene	110-57-6
3,4-Dichloro-1-butene	64037-54-3
Dichlorodifluoromethane	75-71-8
Dichlorodimethylsilane	75-78-5
Dichlorofluoromethane	75-43-4
Diethanolamine	111-42-2

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Diethylbenzene	25340-17-4
Diethylene glycol	111-46-6
Di-isodecyl phthalate	26761-40-0
Dimethyl terephthalate	120-61-6
2,4-(and 2,6)-dinitrotoluene	121-14-2
	606-20-2
Dioctyl phthalate	117-81-7
Dodecene	25378-22-7
Dodecylbenzene, nonlinear	
Dodecylbenzenesulfonic acid	27176-87-0
Dodecylbenzenesulfonic acid, sodium salt	25155-30-0
Epichlorohydrin	106-89-8
Ethanol	64-17-5
Ethanolamine	141-43-5
Ethyl acetate	141-78-6
Ethyl acrylate	140-88-5
Ethylbenzene	100-41-4
Ethyl chloride	75-00-3
Ethylene	74-85-1
Ethylene dibromide	106-93-4
Ethylene dichloride	107-06-2
Ethylene glycol	107-21-1
Ethylene glycol monobutyl ether	111-76-2
Ethylene glycol monoethyl ether acetate	111-15-9
Ethylene glycol monomethyl ether	109-86-4
Ethylene oxide	75-21-8
2-Ethylhexyl alcohol	104-76-7
(2-Ethylhexyl) amine	104-75-6
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547-17-8
Formaldehyde	50-00-0



**APPENDIX B – NSPS SUBPART RRR**

Glycerol	56-81-5
n-Heptane	142-82-5
Heptenes (mixed)	
Hexamethylene diamine	124-09-4
Hexamethylene diamine adipate	3323-53-3
Hexamethylenetetramine	100-97-0
Hexane	110-54-3
Isobutane	75-28-5
Isobutanol	78-83-1
Isobutylene	115-11-7
Isobutyraldehyde	78-84-2
Isopentane	78-78-4
Isoprene	78-79-5
Isopropanol	67-63-0
Ketene	463-51-4
Linear alcohols, ethoxylated, mixed	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed	
Linear alcohols, sulfated, sodium salt, mixed	
Linear alkylbenzene	123-01-3
Maleic anhydride	108-31-6
Mesityl oxide	141-79-7
Methanol	67-56-1
Methylamine	74-39-5
ar-Methylbenzenediamine	25376-45-8
Methyl chloride	74-87-3
Methylene chloride	75-09-2
Methyl ethyl ketone	78-93-3
Methyl isobutyl ketone	108-10-1
Methyl methacrylate	80-62-6
1-Methyl-2-pyrrolidone	872-50-4

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Methyl tert-butyl ether	
Naphthalene	91-20-3
Nitrobenzene	98-95-3
1-Nonene	27215-95-8
Nonyl alcohol	143-08-8
Nonylphenol	25154-52-3
Nonylphenol, ethoxylated	9016-45-9
Octene	25377-83-7
Oil-soluble petroleum sulfonate, calcium salt	
Pentaerythritol	115-77-5
3-Pentenitrile	4635-87-4
Pentenenes, mixed	109-67-1
Perchloroethylene	127-18-4
Phenol	108-95-2
1-Phenylethyl hydroperoxide	3071-32-7
Phenylpropane	103-65-1
Phosgene	75-44-5
Phthalic anhydride	85-44-9
Propane	74-98-6
Propionaldehyde	123-38-6
Propyl alcohol	71-23-8
Propylene	115-07-1
Propylene glycol	57-55-6
Propylene oxide	75-56-9
Sorbitol	50-70-4
Styrene	100-42-5
Terephthalic acid	100-21-0
Tetraethyl lead	78-00-2
Tetrahydrofuran	109-99-9
Tetra (methyl-ethyl) lead	

## APPENDIX B – NSPS SUBPART RRR

Tetramethyl lead	75-74-1
Toluene	108-88-3
Toluene-2,4-diamine	95-80-7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471-62-5
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene	79-01-6
Trichlorofluoromethane	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Triethanolamine	102-71-6
Triethylene glycol	112-27-6
Vinyl acetate	108-05-4
Vinyl chloride	75-01-4
Vinylidene chloride	75-35-4
m-Xylene	108-38-3
o-Xylene	95-47-6
p-Xylene	106-42-3
Xylenes (mixed)	1330-20-7

<sup>1</sup>CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995]

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### **§60.708 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §60.703(e).

## **Subpart KKK—Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011**

SOURCE: 50 FR 26124, June 24, 1985, unless otherwise noted.

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### **§60.630 Applicability and designation of affected facility.**

(a)(1) The provisions of this subpart apply to affected facilities in onshore natural gas processing plants.

(2) A compressor in VOC service or in wet gas service is an affected facility.

(3) The group of all equipment except compressors (defined in §60.631) within a process unit is an affected facility.


(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, and on or before August 23, 2011, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in §60.631) for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities covered by subpart VV or subpart GGG of 40 CFR part 60 are excluded from this subpart.

(e) A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of this subpart.

[50 FR 26124, June 24, 1985, as amended at 77 FR 49542, Aug. 16, 2012]

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### **§60.631 Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A or subpart VV of part 60; and the following terms shall have the specific meanings given them.

*Alaskan North Slope* means the approximately 69,000 square-mile area extending from the Brooks Range to the Arctic Ocean.

*Equipment* means each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart.

*Field gas* means feedstock gas entering the natural gas processing plant.

*In light liquid service* means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e) or §60.633(h)(2).

*In wet gas service* means that a piece of equipment contains or contacts the field gas before the extraction step in the process.

*Natural gas liquids* means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas.


*Natural gas processing plant* (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

*Nonfractionating plant* means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

*Onshore* means all facilities except those that are located in the territorial seas or on the outer continental shelf.

*Process unit* means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

*Reciprocating compressor* means a piece of equipment that increases the pressure of a process gas by positive displacement, employing linear movement of the driveshaft.

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#### **§60.632 Standards.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§60.482-1 (a), (b), and (d) and 60.482-2 through 60.482-10, except as provided in §60.633, as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of §§60.483-1 and 60.483-2.

(c) An owner or operator may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of §60.634 of this subpart.


(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §60.485 except as provided in §60.633(f) of this subpart.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§60.486 and 60.487 except as provided in §§60.633, 60.635, and 60.636 of this subpart.

(f) An owner or operator shall use the following provision instead of §60.485(d)(1): Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator

demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight. For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E169-63, 77, or 93, E168-67, 77, or 92, or E260-73, 91, or 96 (incorporated by reference as specified in §60.17) shall be used.

[50 FR 26124, June 24, 1985, as amended at 65 FR 61773, Oct. 17, 2000]

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### **§60.633 Exceptions.**

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in §60.485(b) except as provided in §60.632(c), paragraph (b)(4) of this section, and §60.482-4 (a) through (c) of subpart VV.

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3)(i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in §60.482-9.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(4)(i) Any pressure relief device that is located in a nonfractionating plant that is monitored only by nonplant personnel may be monitored after a pressure release the next time the monitoring personnel are on site, instead of within 5 days as specified in paragraph (b)(1) of this section and §60.482-4(b)(1) of subpart VV.

(ii) No pressure relief device described in paragraph (b)(4)(i) of this section shall be allowed to operate for more than 30 days after a pressure release without monitoring.

(c) Sampling connection systems are exempt from the requirements of §60.482-5.

(d) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§60.482-2(a)(1) and 60.482-7(a), and paragraph (b)(1) of this section.

(e) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service within a process unit that is located in the Alaskan North Slope are exempt from the routine monitoring requirements of §§60.482-2(a)(1), 60.482-7(a), and paragraph (b)(1) of this section.

(f) Reciprocating compressors in wet gas service are exempt from the compressor control requirements of §60.482-3.


(g) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(h) An owner or operator may use the following provisions instead of §60.485(e):

(1) Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150 °C (302 °F) as determined by ASTM Method D86-78, 82, 90, 95, or 96 (incorporated by reference as specified in §60.17).

(2) Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86-78, 82, 90, 95, or 96 (incorporated by reference as specified in §60.17).

[50 FR 26124, June 24, 1985, as amended at 51 FR 2702, Jan. 21, 1986; 65 FR 61773, Oct. 17, 2000]

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#### **§60.634 Alternative means of emission limitation.**

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the Administrator will publish, in the FEDERAL REGISTER a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.


(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a public hearing.

(c) The Administrator will consider applications under this section from either owners or operators of affected facilities, or manufacturers of control equipment.

(d) The Administrator will treat applications under this section according to the following criteria, except in cases where he concludes that other criteria are appropriate:

(1) The applicant must collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in paragraph (a) of this section.

(2) If the applicant is an owner or operator of an affected facility, he must commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

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#### **§60.635 Recordkeeping requirements.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of §60.486.

(b) The following recordkeeping requirements shall apply to pressure relief devices subject to the requirements of §60.633(b)(1) of this subpart.

(1) When each leak is detected as specified in §60.633(b)(2), a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.

(2) When each leak is detected as specified in §60.633(b)(2), the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date the leak was detected and the dates of each attempt to repair the leak.

(iii) Repair methods applied in each attempt to repair the leak.

(iv) "Above 10,000 ppm" if the maximum instrument reading measured by the methods specified in paragraph (a) of this section after each repair attempt is 10,000 ppm or greater.

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vi) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.


(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(viii) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(ix) The date of successful repair of the leak.

(x) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §60.482-4(a). The designation of equipment subject to the provisions of §60.482-4(a) shall be signed by the owner or operator.

(c) An owner or operator shall comply with the following requirement in addition to the requirement of §60.486(j): Information and data used to demonstrate that a reciprocating compressor is in wet gas service to apply for the exemption in §60.633(f) shall be recorded in a log that is kept in a readily accessible location.

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#### **§60.636 Reporting requirements.**

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of §60.487.

(b) An owner or operator shall include the following information in the initial semiannual report in addition to the information required in §60.487(b) (1)-(4): Number of pressure relief devices subject to the requirements of §60.633(b) except for those pressure relief devices designated for no detectable emissions under the provisions of §60.482-4(a) and those pressure relief devices complying with §60.482-4(c).

(c) An owner or operator shall include the following information in all semiannual reports in addition to the information required in §60.487(c)(2) (i) through (vi):



(1) Number of pressure relief devices for which leaks were detected as required in §60.633(b)(2)  
and

(2) Number of pressure relief devices for which leaks were not repaired as required in §60.633(b)(3).